



CURRENT SENSORS

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Instruction for use

■ HC series and HD series current sensors

- 1) When the frequency of the input current is high, the core generates an unusual amount of heat due to core loss, and this heat may damage the internal circuits. The amount of heat generated is influenced by the frequency and amount of the input current and differs depending on the type of sensor, so check the performance on the actual machine.
We are able to produce heat generation countermeasure products which use different core materials. Please
- 2) Since the output varies depending on the size of the load resistance, use with the specified resistance. (The size of the load resistance can be specified by the user.)
- 3) The signal output driver of the HD Series uses a C-MOS IC. Be careful when handling and avoid direct contact.
- 4) Output terminal pins 9 and 10 of the HD Series are analog output terminals for small signal input.
Do not connect them to the lead wire or they will be affected by the data and clocking signal.

■ HS series and HM series current sensors

- 1) Use a resistance which has good accuracy and temperature characteristics for the load resistance which is connected to current output type sensors.
- 2) Prepare a control power supply the capacity of which is at least twice the rated output current.
- 3) If the connector is inserted or removed while the control power is being applied, residual magnetism may occur in the core due to the terminal contact timing becoming out of sequence, and the residual voltage may be affected. In addition to turning the power supply on and off while the connector is connected, ensure that the + side and - side of the power supply are matched.
- 4) In inputting current above rating, note that some models specify energization time.
If the product is used in excess of this time, internal circuit may fail.
- 5) When current exceeding saturation current is input, magnet compensation will not work, and residual output will cause displacement, therefore, use the product always at current below saturation current.
- 6) Demagnetize the sensors without applying electric power.

■ Common instruction for all series

- 1) Erroneous connection of the control terminals will cause the internal circuits to be instantaneously destroyed. Pay sufficient attention to the connection.
- 2) If static electricity or surge voltage is applied, the residual voltage may be increased.
- 3) In addition to making the control wiring as short as possible to protect it from outside noise, use twisted wire or shielding wire.
- 4) Connect a capacitor of approximately $0.1\mu\text{F}$ between the control power supply and GND.
- 5) Attach PCB mounting type current sensors firmly to the installation board so that they are not separated from it by more than 0.5mm.
Furthermore, perform the soldering under the following conditions.

<Pb-free>	Flow solder: Solder temperature approx. 260 degrees C, within 5 seconds Hand solder: Solder temperature approx. 340 degrees C, within 4 seconds
	Flow solder: Solder temperature approx. 250 degrees C, within 5 seconds Hand solder: Solder temperature approx. 300 degrees C, within 3 seconds

6) The current sensor may be corroded under corrosive gas atmosphere. Make sufficient confirmation under actual service environmental conditions before use.

7) Do not store the sensors in hot or humid environments.

■ Usage limitations for current sensors

The products listed in our catalog are intended for use in general equipments (business machines, measuring equipments, industrial equipments, and home appliances, etc.), not for use under circumstances which may involve human life. They are not intended for use in special applications wherein high quality and reliability are required and the failure or malfunction of the product may cause danger to human body, such as nuclear power stations, transportation apparatuses (automobile, trains, ships, etc.), medical equipments for life support, or safety systems. If you need to use any of our products in one of the above mentioned special applications, please notify us or our agent beforehand for assistance.

■ Export limitations for Foreign Exchange and Foreign Trade Law

A product designated as 'strategic item' is controlled under the Foreign Exchange and Foreign Trade Law and WMD catchall and requires permission from the Japanese Government prior to export. If you are unsure whether a product is controlled, please contact us or our agent for assistance.

■ Concern for safety

While we constantly strive to improve quality and reliability and use materials compliant with safety guidelines, even though unlikely, current sensors can sometimes fail or malfunction. We caution the designer to respect all aspects of safety in order to protect life, prevent injury and prevent property damage should our product accidentally fail or malfunction.

Characteristic

The main characteristics and their details are described below.

Each characteristic is specified at an ambient temperature of 25 degrees C and with the stipulated control voltage ($\pm 1\%$ or less error) applied. (Only the control voltage is specified for the temperature characteristics.)

1) Rated output

Denotes the output when the rated current is input to the primary side.

2) Residual output

Denotes the output when the primary side input is zero. This measurement is performed after the core is demagnetized (an AC current equivalent to the rated current is input to the primary side and slowly made zero).

3) Linearity

Denotes the error in the actually measured output value and the estimate output voltage calculated by the least mean squares method from the output and residual output when the rated current and 1/2 rated current are

4) Saturation current

Denotes the input current value for which the output deviates from the estimate output voltage by more than

5) Linearity limits

Denotes the range of the input current value for which the output is within 1% of the estimate output voltage.

6) Output temperature characteristic

Denotes the rate of temperature change of the output (value after the residual output is subtracted) when the rated current is input within the working temperature range. (The rate of change is shown per 1 degrees C with the output at 25 degrees C as the reference.)

7) Residual output temperature characteristic

Denotes the temperature change of the residual output within the working temperature range. (The change per 1 degrees C is shown.)

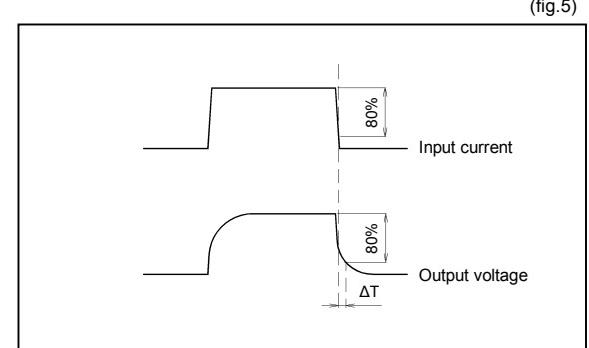
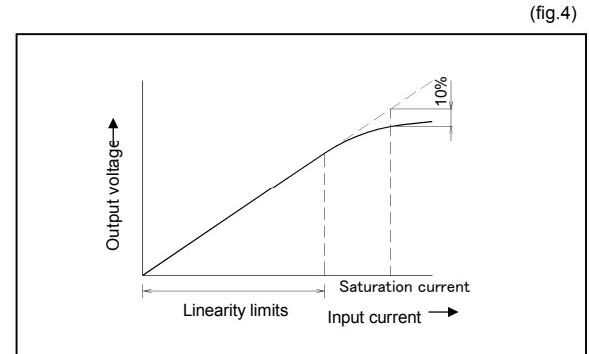
8) Response time

Denotes the output response time (ΔT) when a pulse current is input as the input current. ΔT is shown as the time difference of when the input and output waveforms drop to 80% of their initial levels.

However, set the smaller one on either input pulse current ($di/dt=100A/\mu s$ or $If/\mu s$).

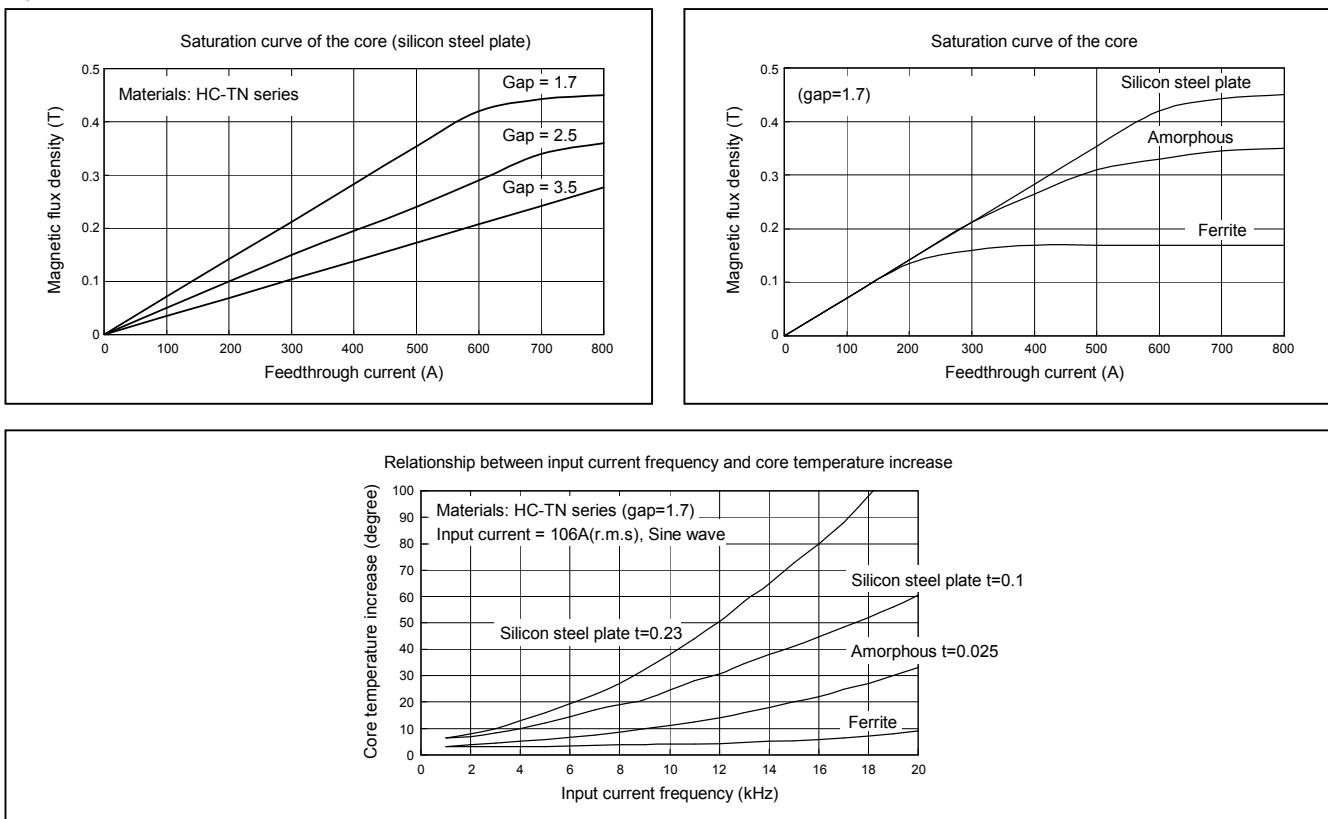
9) DC currents continuously flowing through board mount models (with a primary winding).

The DC currents continuously flowing through board mount models (with a primary winding) are limited by the wire diameter of the winding used in them. With some exceptions, our current sensors (with a primary winding) normally have $1/\sqrt{2}$ of the rated DC current set as a continuously flowing current. The relationships between the wire diameters of primary windings and the continuously flowing DC currents are summarized in the table below. Continuously flowing DC currents should be equal to the r.m.s. values of AC currents.



Wire diameter	Continuously flowing DC current (A)
Φ0.4	2.2
Φ0.5	3.5
Φ0.6	5
Φ0.8	8.8
Φ1.0	13.8
Φ1.1	16.7
Φ1.2	19.9
Φ1.3	23.3
Φ1 x 2	35
Φ1.6	35.4
Φ1.2 x 2	36.8
Φ1.1 x 2	33.4
Φ1.4 x 2	54.1

10) Characteristics of core

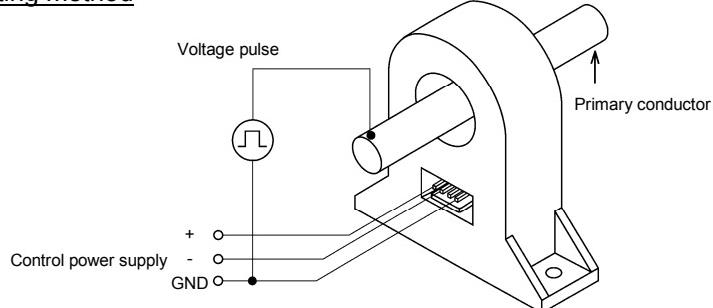


11) Noise testing method

(1) Effects of dv/dt

Waveform of the output voltage when the voltage pulse of $dv/dt=300V/\mu s$ is applied.

Testing method

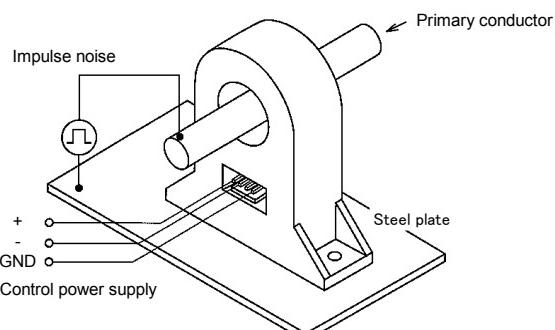


(2) Effects of impulse noise

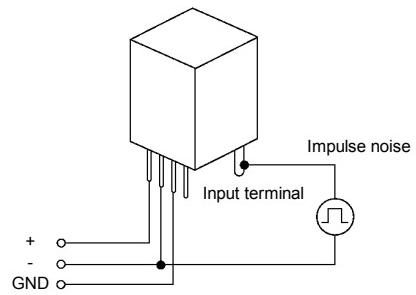
Waveform of the output voltage when the impulse noise of rise time 1ns, pulse width 1μs, and voltage 2,000V is applied.

Testing method

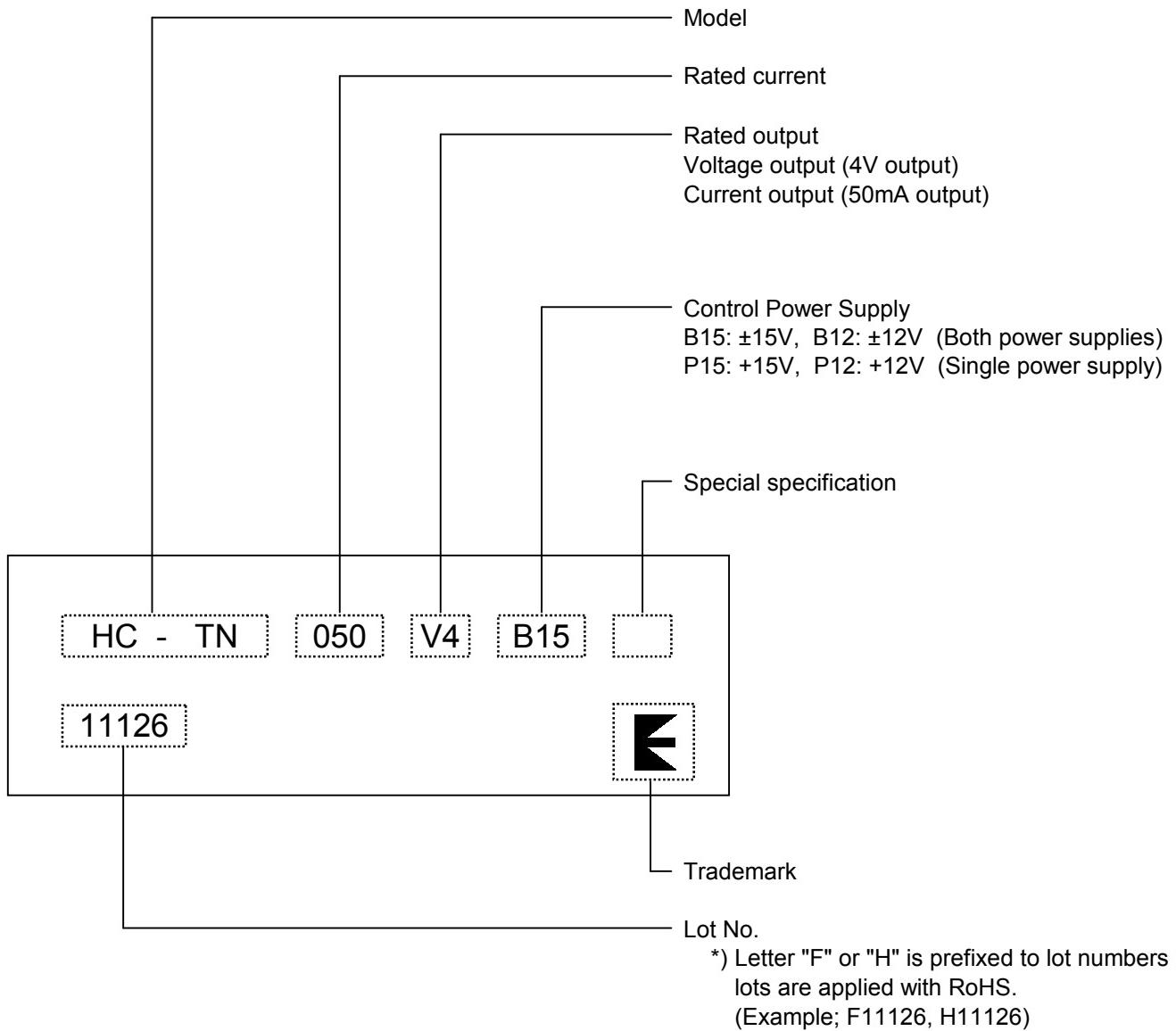
[Bolt-on type]



[PCB-mounting type]



Product marking



Standard max. rating	Input display	Example of display		
Series of 70A or less	To the first decimal place	5A…05	37.5A…375	70A…70
Series of over 70A	000 ~ 999	70A…070	100A…100	
1000A or more	E and first two digits	1000A…E10	3500A…E35	5000A…E50

A table

Type	Rated current (A)																			
	1	5	10	15	20	30	50	60	70	100	200	250	300	400	500	800	1000	2000	3000	4000
■ Open loop system																				
◎ Bolt on type																				
HC-MJ																				
HC-L																				
HC-ML																				
HC-MN																				
HC-MSL																				
HC-MSN																				
HC-TF																				
HC-TTA																				
HC-TTB																				
HC-SL																				
HC-SN																				
HC-TN																				
HC-TS																				
HC-U																				
HC-W																				
HC-WT																				
HC-VT																				
◎ PCB mounting type																				
HC-TTC																				
HC-PZ																				
HC-PT																				
HC-PTW																				
HC-PG																				
HC-PJ																				
HC-PVT																				
HC-PSG																				
HC-PSE																				
HC-PD																				
HC-PDN																				
HC-PDA																				
HC-PAE																				
HC-PL																				
HC-PFG																				
HC-PRZ																				
HC-PRX																				
■ Closed loop system																				
HS-PHA																				
HS-PHB																				
HS-P																				
HS-PKD																				
HS-PTF																				
HS-U																				
HS-UF																				
HS-UD																				
HS-K																				
■ Digital sensor																				
HD-TS																				
■ Magnetic coil type																				
HM-B																				
■ Clamp type AC-CT																				
HA-A																				
HA-B, C																				
HA-BV, CV																				
HA-BR																				

HC-MJ



- Rated current 1000A ~ 4000A

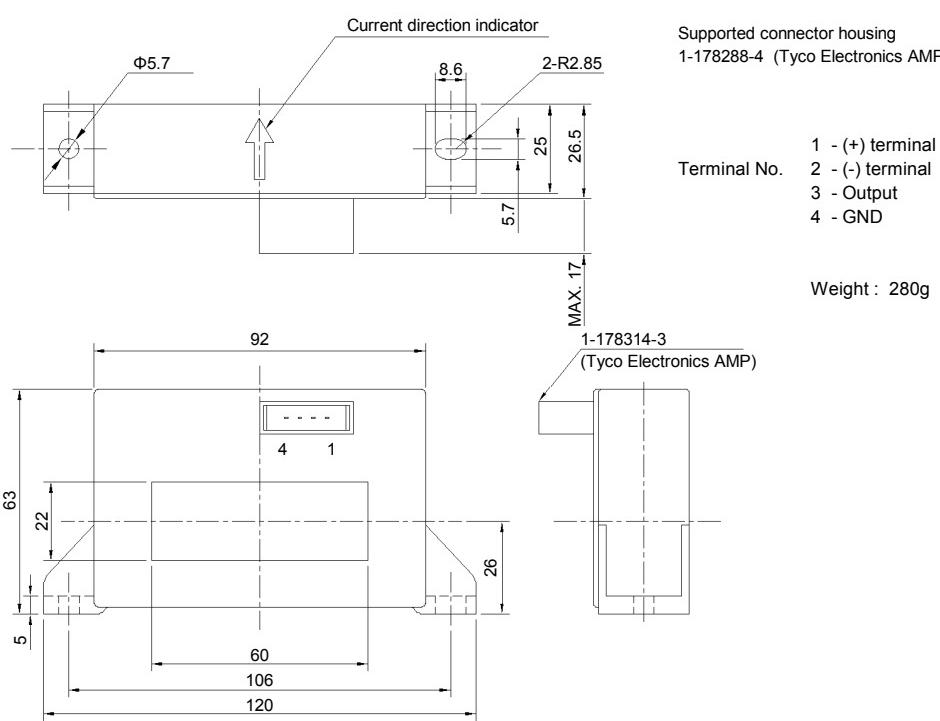
- Protection network internalized for superior surge withstand capability

Applications

High-capacity inverters (for power plants), High-capacity power supply equipment

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-MJE10V4B15	HC-MJE20V4B15	HC-MJE30V4B15	HC-MJE40V4B15
Rated current [If]	±1000A	±2000A	±3000A	±4000A
Saturation current [Is]	±2400A	±2400A	±4800A	±4800A
Linearity limits	0~±2000A	0~±2000A	0~±4000A	0~±4000A
Rated output [Vh]	±4V±1.5%			
Residual output [Vo]	Within ±30mV			
Output linearity	Within ±1%			
Response time	Within 10μs (at di/dt=100A/μs)			
Response performance	Within 10%			
Hysteresis voltage range	Within 30mV			
Output Temp. Coef.	Within ±0.1%/°C			
Residual output Temp. Coef.	Within ±1.5mV/°C			
Control power supply	±15V±5%			
Consumption current	Within 50mA			
Operating Temp.	-40°C~+80°C			
Storage Temp.	-40°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

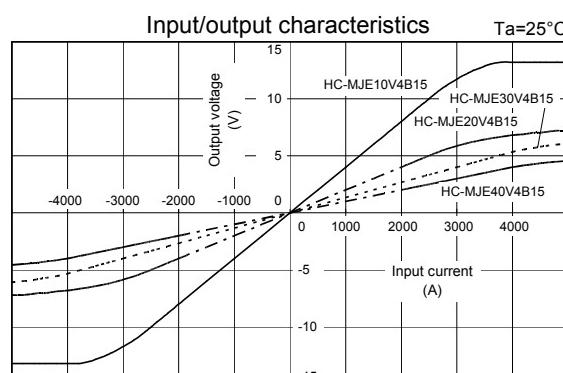
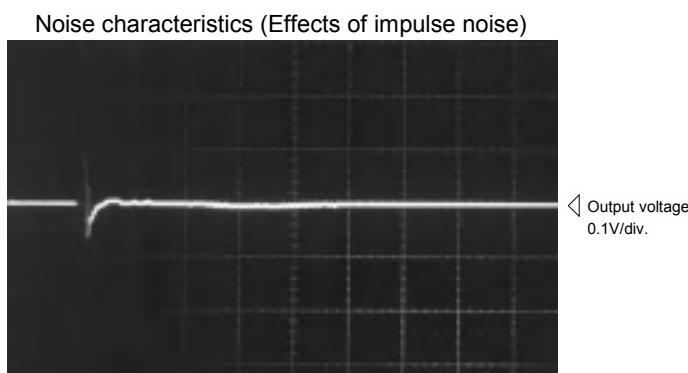
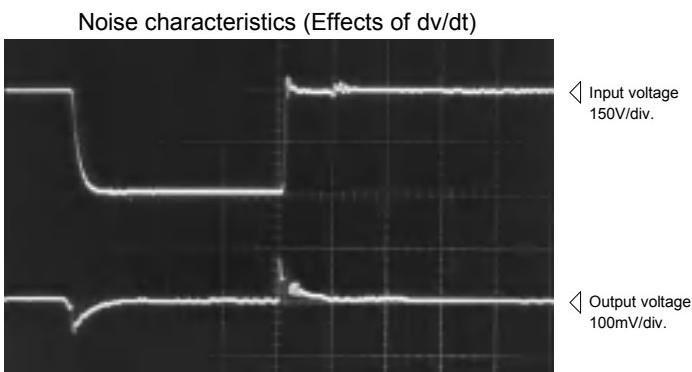
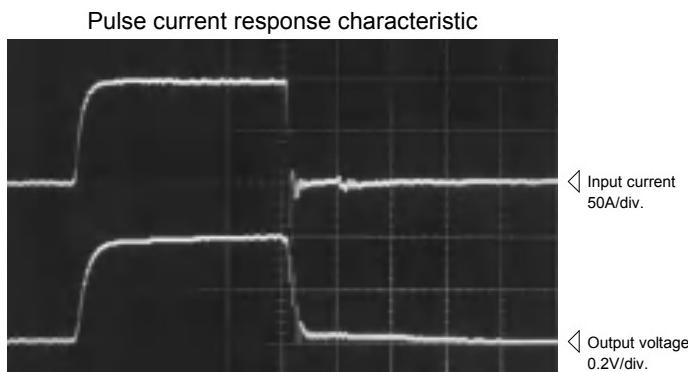
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-MJE10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-L



- Rated current 800A ~ 3000A

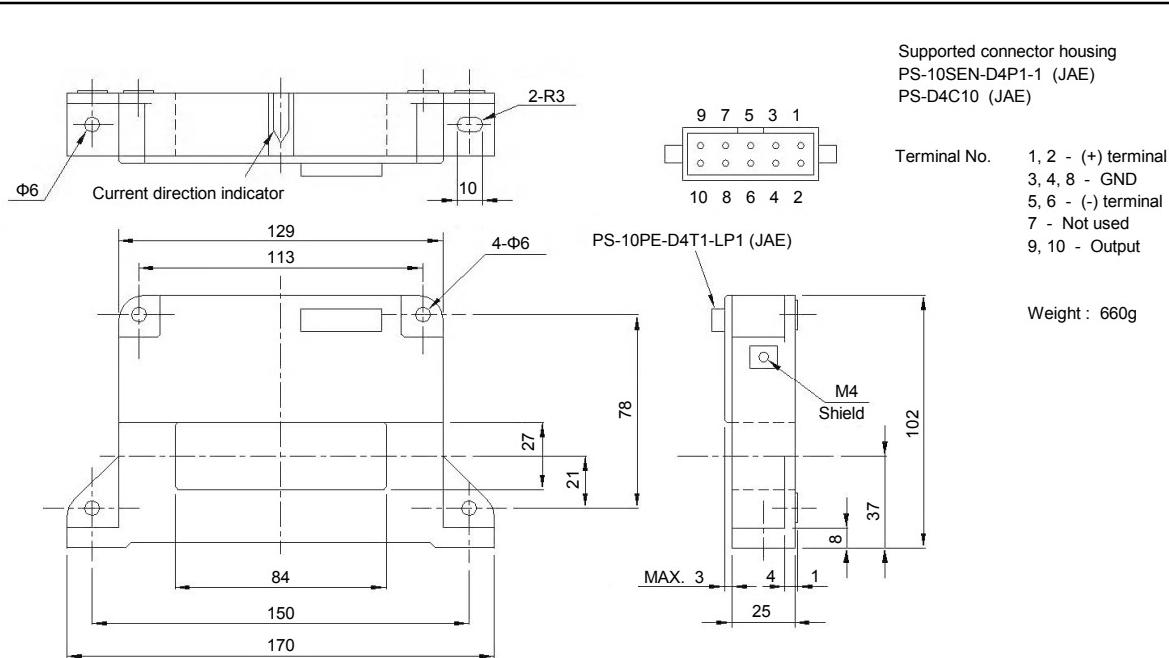
- Superior noise-resistance

Applications

High-capacity inverters (for power plants), High-capacity power supply equipment

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-L800V4B15	HC-LE10V4B15	HC-LE20V4B15	HC-LE30V4B15
Rated current [If]	±800A	±1000A	±2000A	±3000A
Saturation current [Is]	±1200A	±2500A	±4000A	±5000A
Linearity limits	0~±1000A	0~±2000A	0~±3500A	0~±4000A
Rated output [Vh]	±4V±1%			
Residual output [Vo]	Within ±30mV			
Output linearity	Within ±1%			
Response time	Within 10μs (at di/dt=100A/μs)			
Response performance	Within 10%			
Hysteresis voltage range	Within 30mV			
Output Temp. Coef.	Within ±0.05%/°C			
Residual output Temp. Coef.	Within ±2mV/°C			
Control power supply	±15V±5%			
Consumption current	Within 50mA			
Operating Temp.	-10°C~+80°C			
Storage Temp.	-15°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

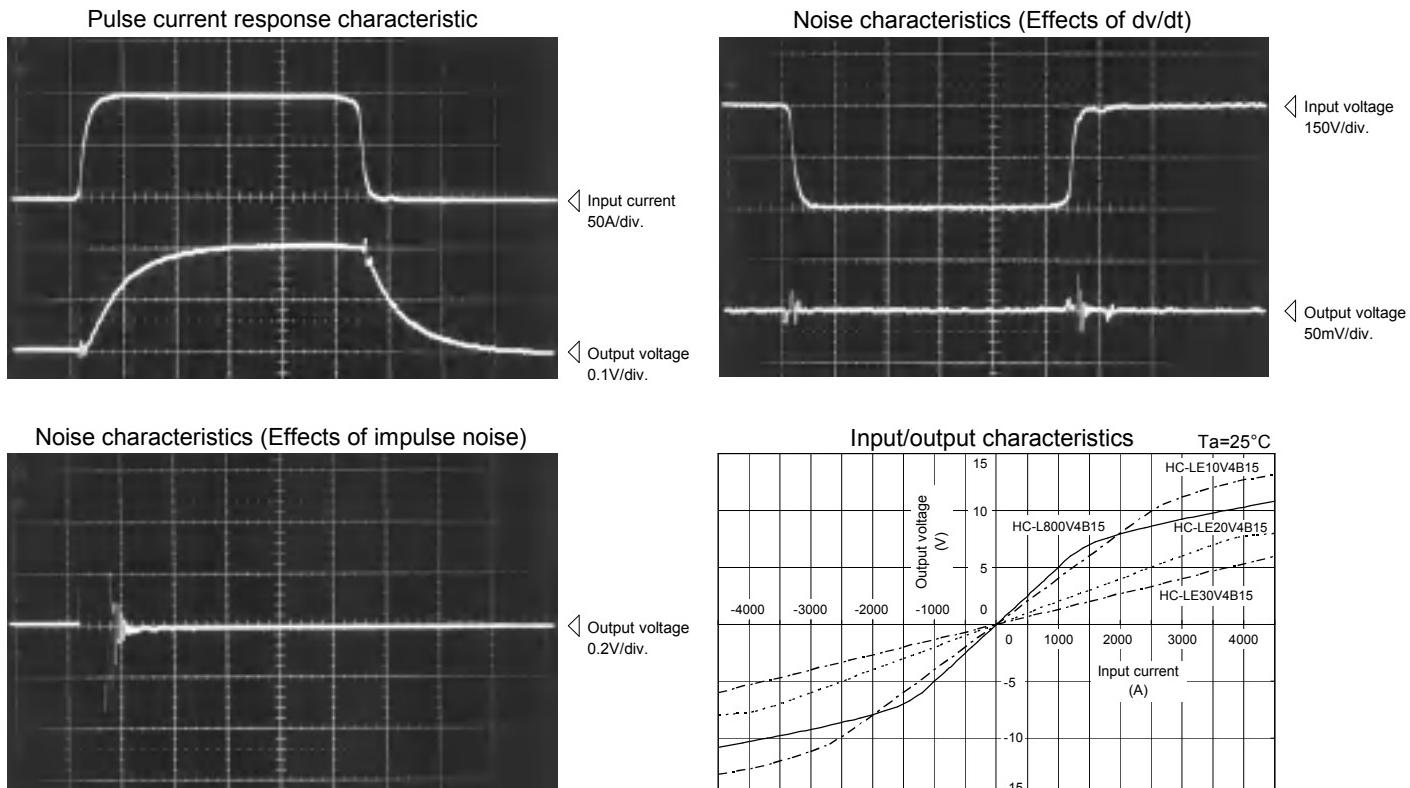
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-LE20V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-ML



- Rated current 300A ~ 3000A

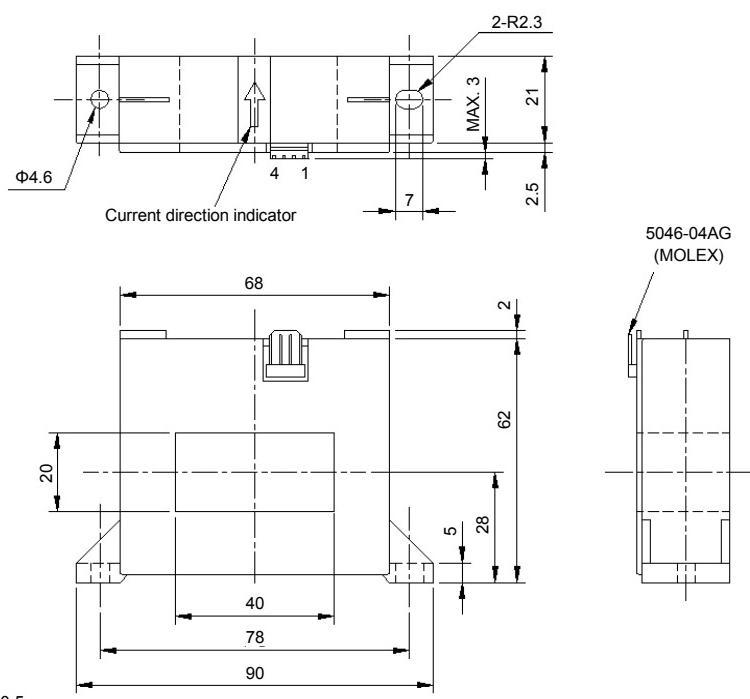
- Screw type control terminals also available

Applications

Inverters, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-ML300V4B15	HC-ML600V4B15	HC-MLE10V4B15	HC-MLE15V4B15	HC-MLE30V4B15						
Rated current [If]	±300A	±600A	±1000A	±1500A	±3000A						
Saturation current [Is]	±900A	±1200A	±2400A	±2400A	±5000A						
Linearity limits	0~±900A	0~±1000A	0~±2100A	0~±2100A	0~±4500A						
Rated output [Vh]	±4V±1%			±4V±2%							
Residual output [Vo]	Within ±30mV										
Output linearity	Within ±1%										
Response time	Within 10μs (at di/dt=100A/μs)										
Response performance	Within 10%										
Hysteresis voltage range	Within 30mV										
Output Temp. Coef.	Within ±0.1%/°C										
Residual output Temp. Coef.	Within ±1mV/°C										
Control power supply	±15V±5%										
Consumption current	Within 30mA	Within 50mA									
Operating Temp.	-10°C~+80°C										
Storage Temp.	-15°C~+85°C										
Dielectric withstand voltage	2500V AC 50/60Hz 1minute										
Insulation resistance	Not less than 500MΩ 500V DC										

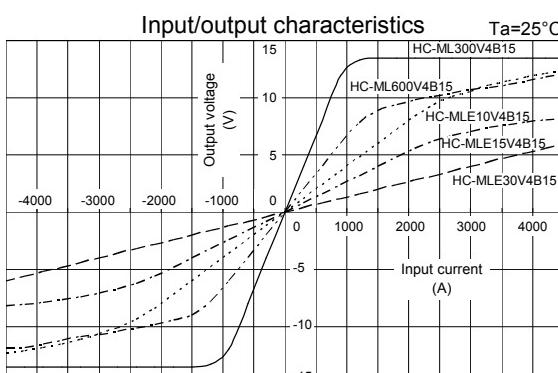
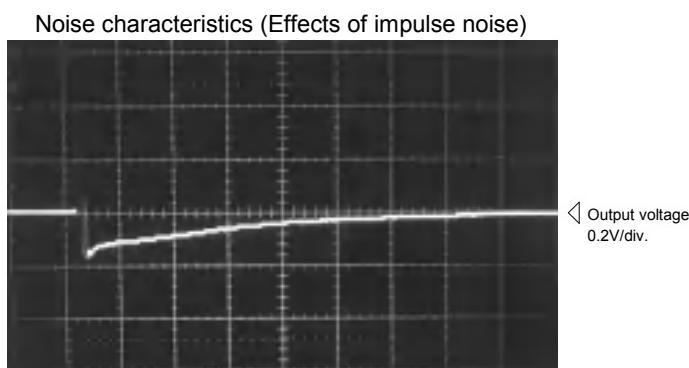
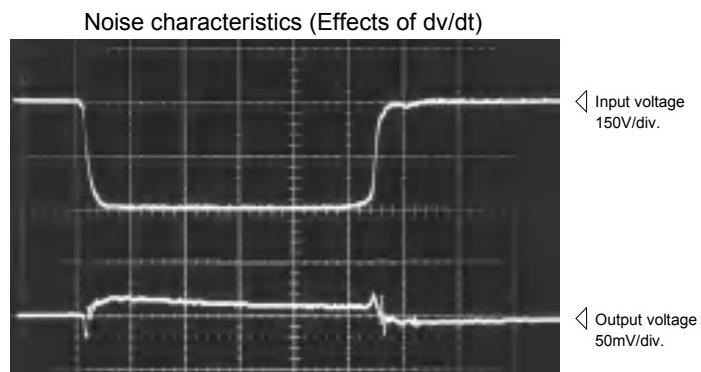
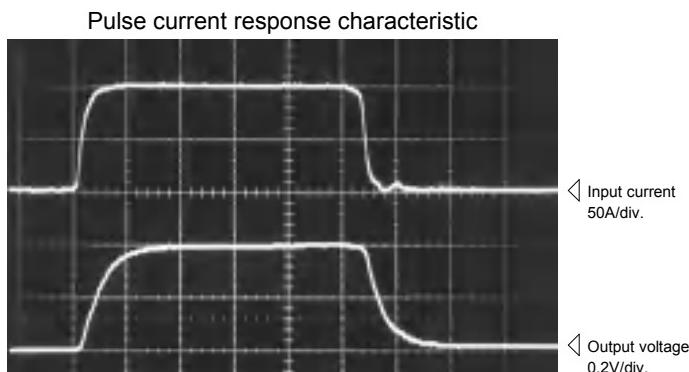
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-MLE10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-MN



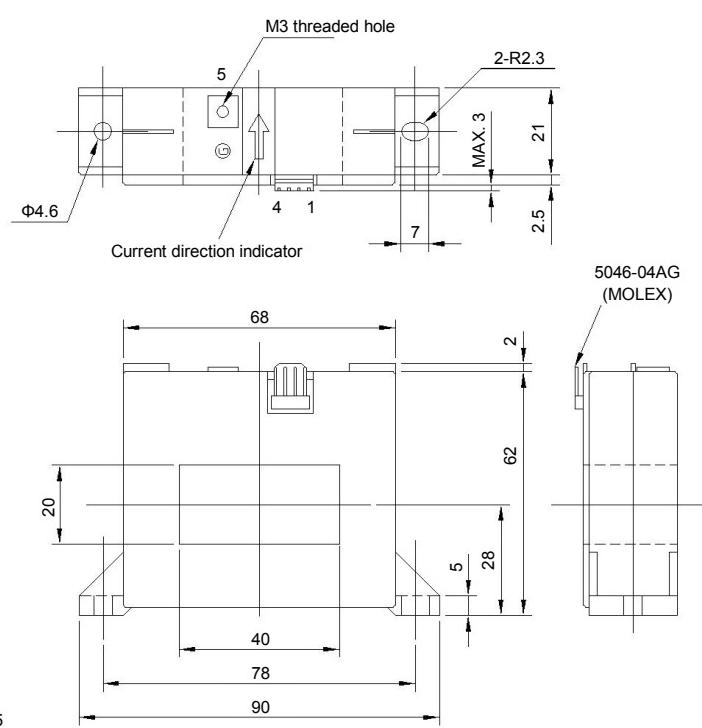
- Rated current 300A ~ 3000A
- Superior noise-resistance
- Screw type control terminals also available
- Single-power supplies also available

Applications

Inverters, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-MN300V4B15	HC-MN600V4B15	HC-MNE10V4B15	HC-MNE15V4B15	HC-MNE30V4B15						
Rated current [If]	±300A	±600A	±1000A	±1500A	±3000A						
Saturation current [Is]	±900A	±1200A	±2400A	±2400A	±5000A						
Linearity limits	0~±900A	0~±1000A	0~±2100A	0~±2100A	0~±4500A						
Rated output [Vh]	±4V±1%			±4V±2%							
Residual output [Vo]	Within ±30mV										
Output linearity	Within ±1%										
Response time	Within 10μs (at di/dt=100A/μs)										
Response performance	Within 10%										
Hysteresis voltage range	Within 30mV										
Output Temp. Coef.	Within ±0.1%/°C										
Residual output Temp. Coef.	Within ±1mV/°C										
Control power supply	±15V±5%										
Consumption current	Within 30mA	Within 50mA									
Operating Temp.	-10°C~+80°C										
Storage Temp.	-15°C~+85°C										
Dielectric withstand voltage	2500V AC 50/60Hz 1minute										
Insulation resistance	Not less than 500MΩ 500V DC										

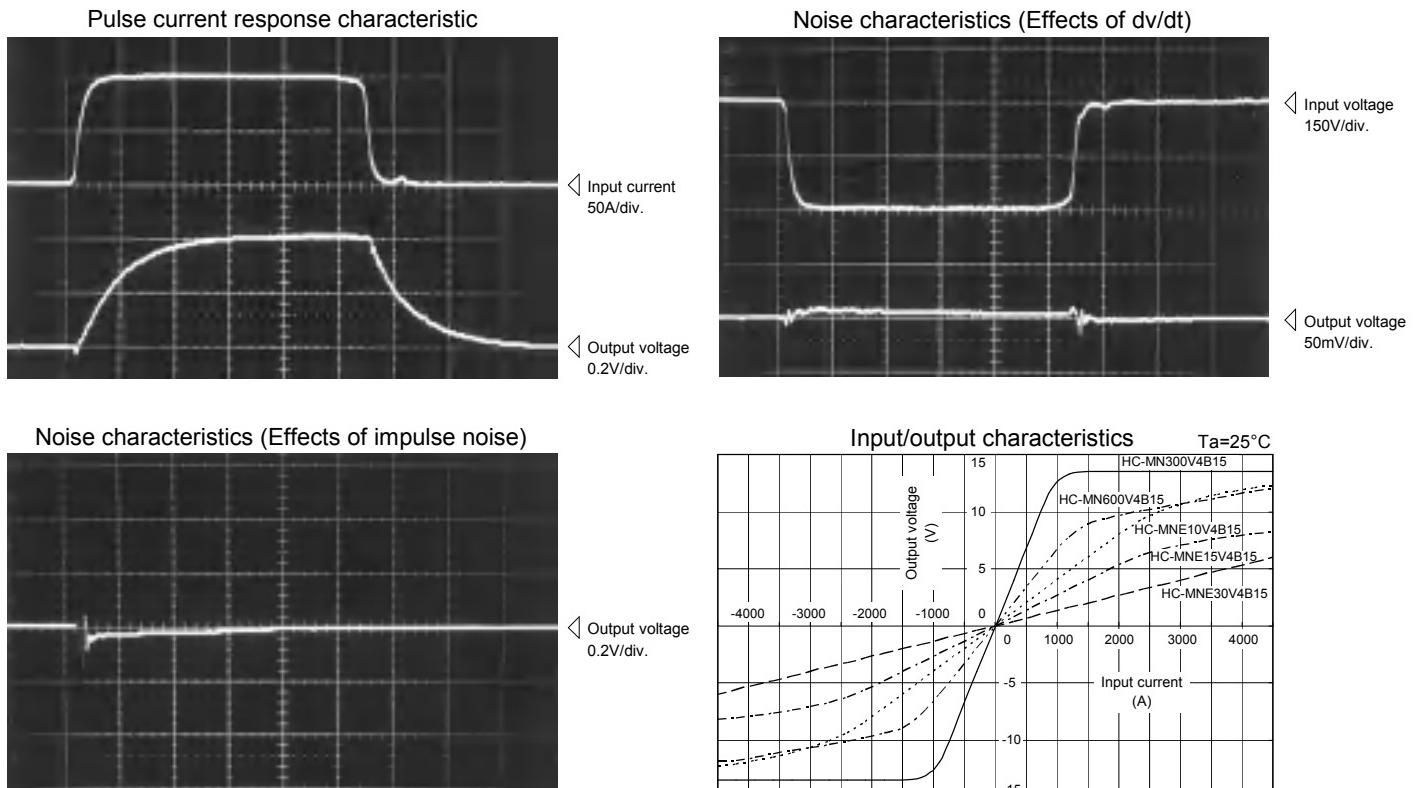
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-MNE10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-MSL



- Rated current 300A ~ 3000A

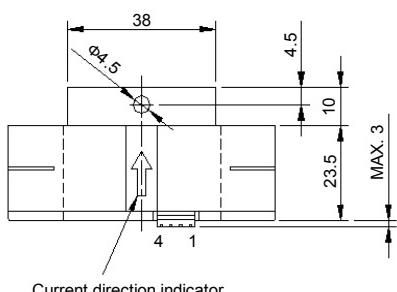
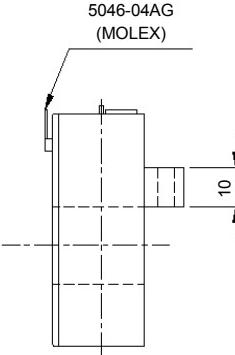
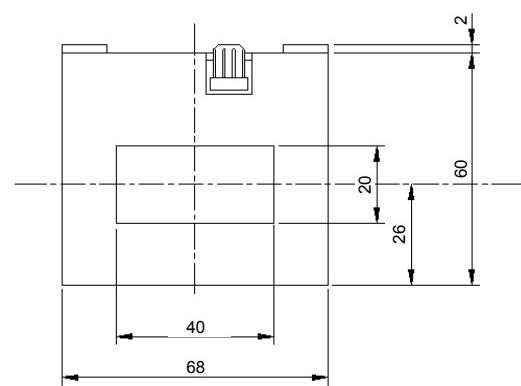
- Screw type control terminals also available

Applications

Inverters, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)

Supported connector housing
5051-04 (MOLEX)Terminal No. 1 - (+) terminal
2 - (-) terminal
3 - Output
4 - GND5046-04AG
(MOLEX) Weight : 200g

General tolerance: ±0.5

Specification

Ta=25°C

Type	HC-MSL300V4B15	HC-MSL600V4B15	HC-MSLE10V4B15	HC-MSLE15V4B15	HC-MSLE30V4B15						
Rated current [If]	±300A	±600A	±1000A	±1500A	±3000A						
Saturation current [Is]	±900A	±1200A	±2400A	±2400A	±5000A						
Linearity limits	0~±900A	0~±1000A	0~±2100A	0~±2100A	0~±4500A						
Rated output [Vh]	±4V±1%			±4V±2%							
Residual output [Vo]	Within ±30mV										
Output linearity	Within ±1%										
Response time	Within 10μs (at di/dt=100A/μs)										
Response performance	Within 10%										
Hysteresis voltage range	Within 30mV										
Output Temp. Coef.	Within ±0.1%/°C										
Residual output Temp. Coef.	Within ±1mV/°C										
Control power supply	±15V±5%										
Consumption current	Within 30mA	Within 50mA									
Operating Temp.	-10°C~+80°C										
Storage Temp.	-15°C~+85°C										
Dielectric withstand voltage	2500V AC 50/60Hz 1minute										
Insulation resistance	Not less than 500MΩ 500V DC										

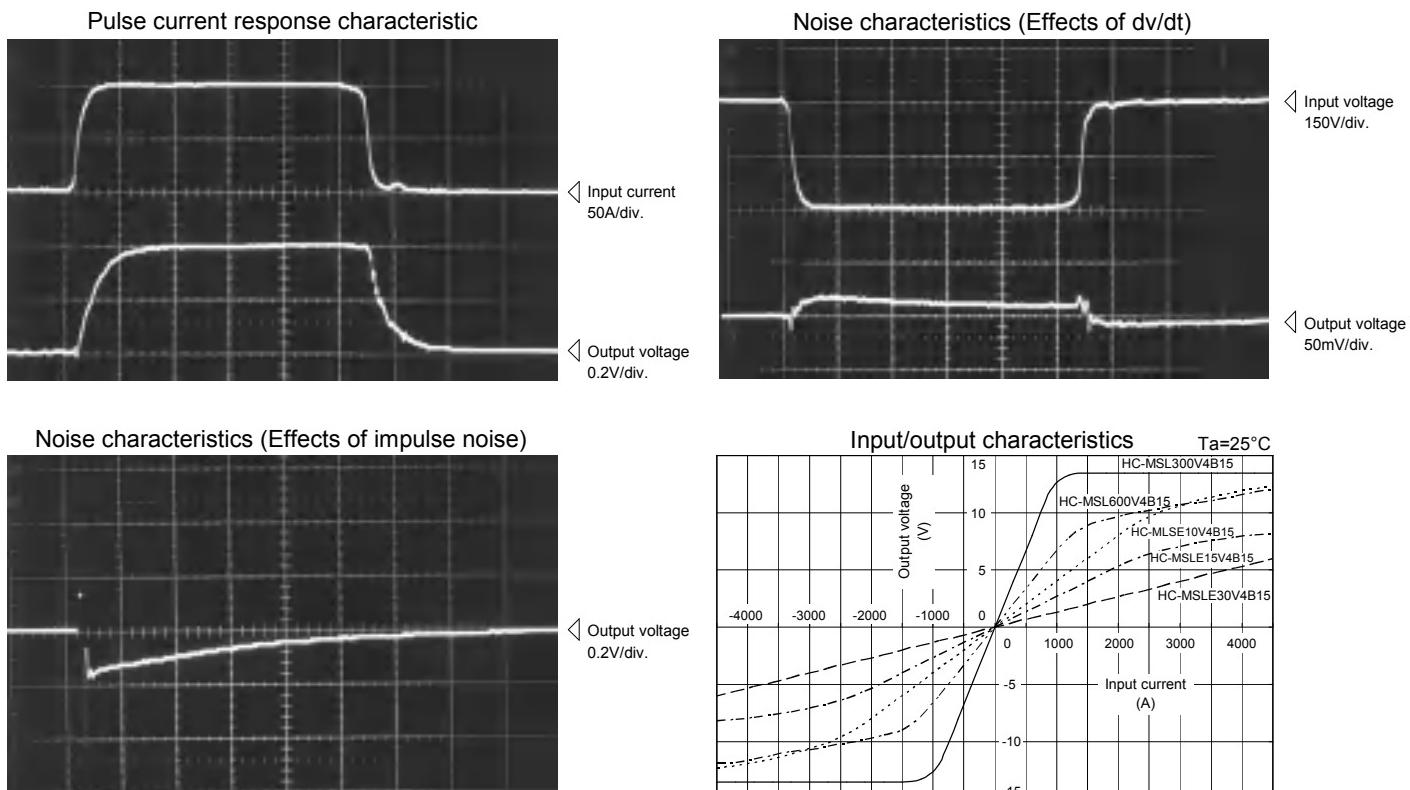
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-MSLE10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-MSN



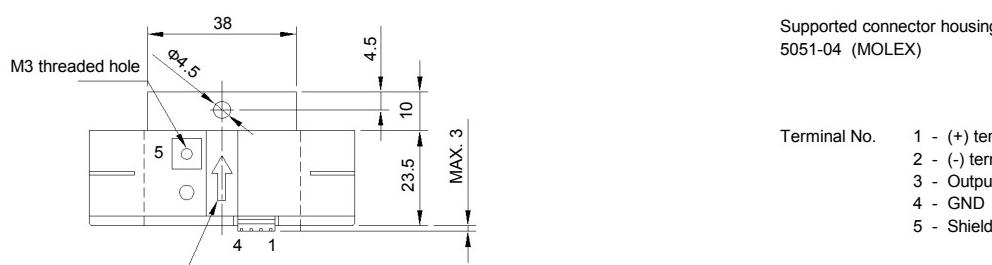
- Rated current 300A ~ 3000A
- Superior noise-resistance
- Screw type control terminals also available
- Single-power supplies also available

Applications

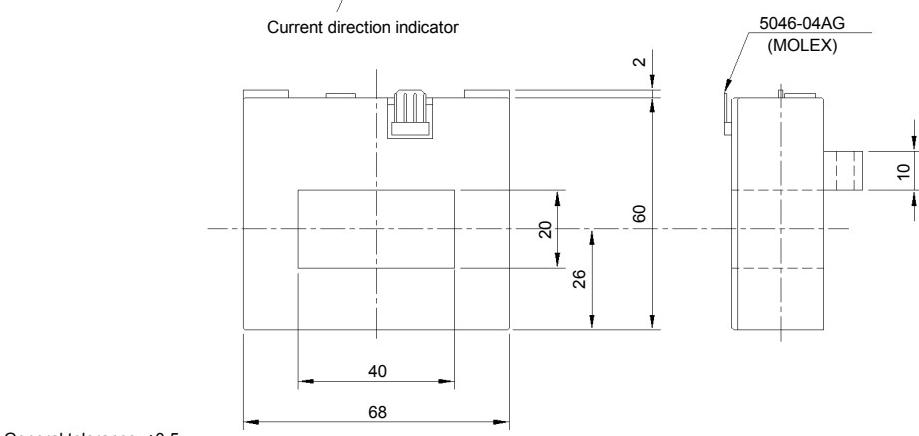
Inverters, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Weight : 200g



Specification

Ta=25°C

Type	HC-MSN300V4B15	HC-MSN600V4B15	HC-MSNE10V4B15	HC-MSNE15V4B15	HC-MSNE30V4B15						
Rated current [If]	±300A	±600A	±1000A	±1500A	±3000A						
Saturation current [Is]	±900A	±1200A	±2400A	±2400A	±5000A						
Linearity limits	0~±900A	0~±1000A	0~±2100A	0~±2100A	0~±4500A						
Rated output [Vh]	±4V±1%			±4V±2%							
Residual output [Vo]	Within ±30mV										
Output linearity	Within ±1%										
Response time	Within 10μs (at di/dt=100A/μs)										
Response performance	Within 10%										
Hysteresis voltage range	Within 30mV										
Output Temp. Coef.	Within ±0.1%/°C										
Residual output Temp. Coef.	Within ±1mV/°C										
Control power supply	±15V±5%										
Consumption current	Within 30mA	Within 50mA									
Operating Temp.	-10°C~+80°C										
Storage Temp.	-15°C~+85°C										
Dielectric withstand voltage	2500V AC 50/60Hz 1minute										
Insulation resistance	Not less than 500MΩ 500V DC										

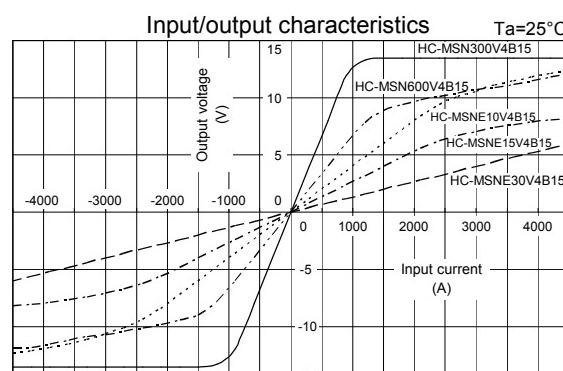
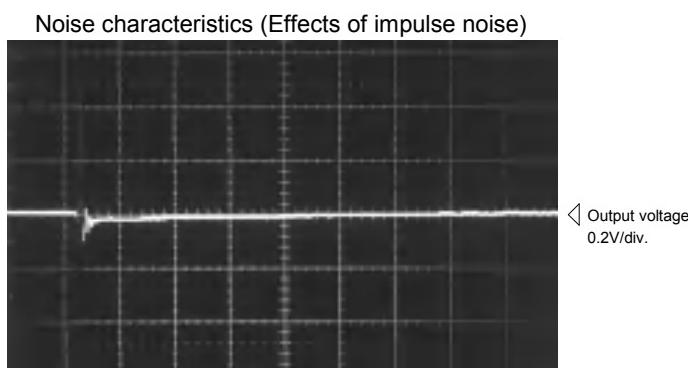
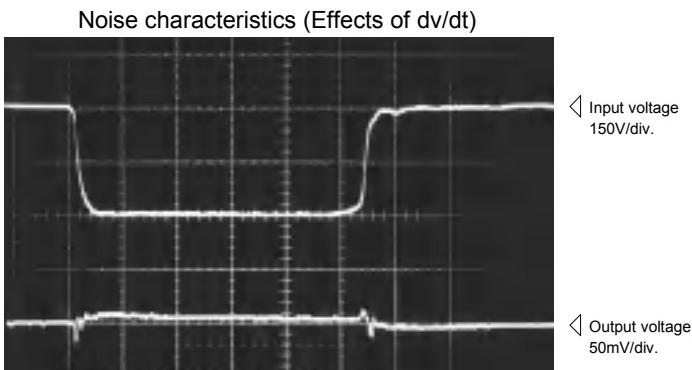
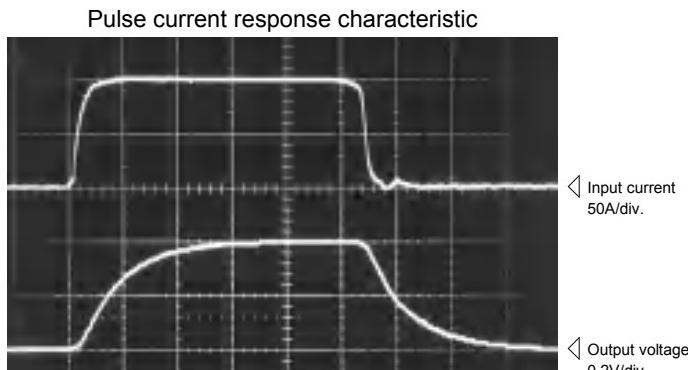
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-MSNE10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-TF



- Rated current 50A ~ 1600A

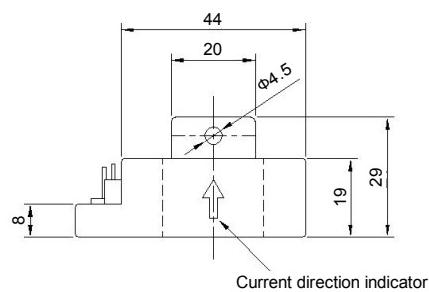
- Single-power supplies also available

Applications

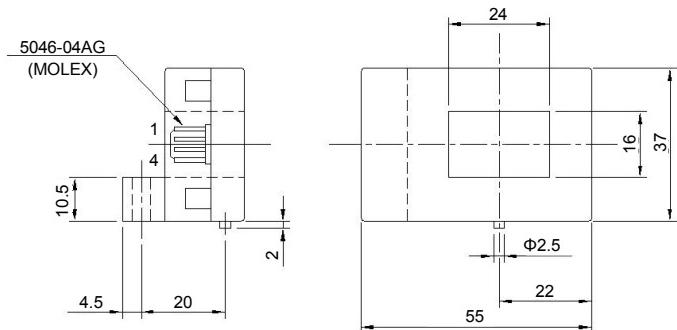
Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)

Supported connector housing
5051-04 (MOLEX)Terminal No. 1 - (+) terminal
2 - (-) terminal
3 - Output
4 - GND

Weight : 66g



General tolerance: ±0.5

Specification

Ta=25°C

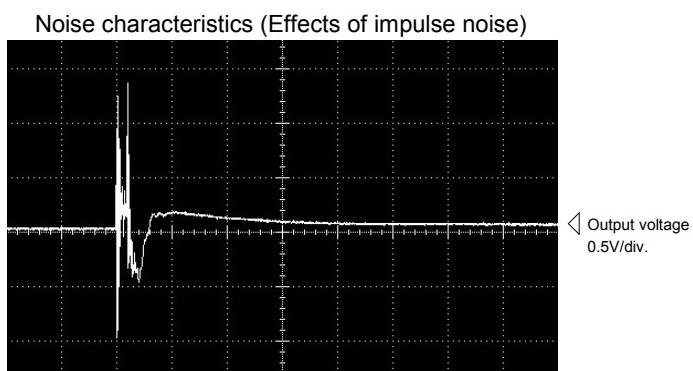
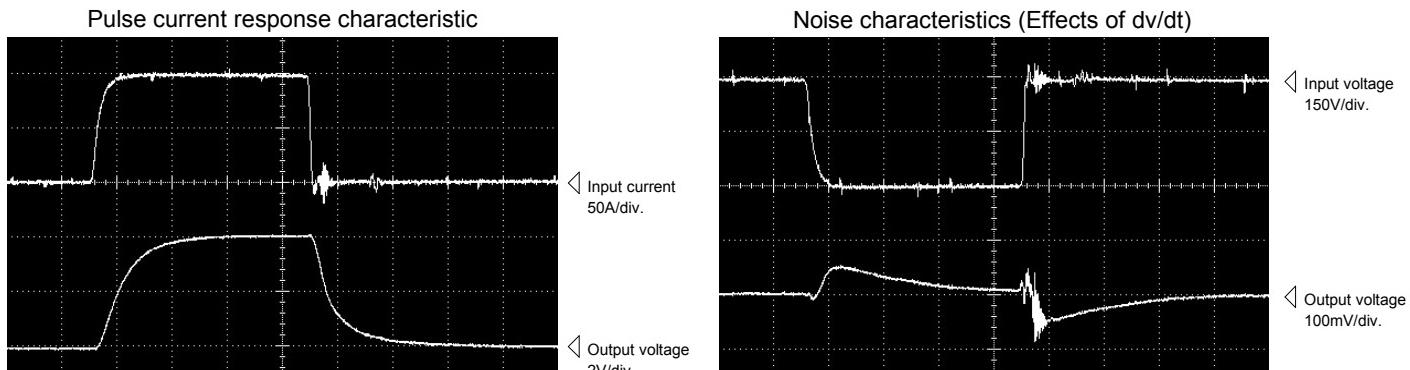
Type	HC-TF050V4B15	HC-TF100V4B15	HC-TF400V4B15	HC-TFE10V4B15H	HC-TFE16V4B15H						
Rated current [If]	±50A	±100A	±400A	±1000A	±1600A						
Saturation current [Is]	±150A	±300A	±900A	±1800A	±1800A						
Linearity limits	0~±112.5A	0~±225A	0~±650A	0~±1600A	0~±1600A						
Rated output [Vh]	+If	V0+4V±1% (RL=10kΩ)		V0+4V±2% (RL=10kΩ)							
	-If	V0-4V±1% (RL=10kΩ)		V0-4V±2% (RL=10kΩ)							
Residual output [Vo]	Within ±70mV	Within ±50mV									
Output linearity	Within ±1%										
Response time	Within 10μs (The smaller one on either at di/dt = 100 A/μs or If/μs.)										
Response performance	Within 10%										
Hysteresis voltage range	Within 30mV										
Output Temp. Coef.	Within ±0.1%/°C										
Residual output Temp. Coef.	Within ±3mV/°C	Within ±1.5mV/°C	Within ±1mV/°C								
Control power supply	±15V±5%										
Consumption current	Within 30mA										
Operating Temp.	-10°C~+80°C										
Storage Temp.	-15°C~+85°C										
Dielectric withstand voltage	2500V AC 50/60Hz 1minute										
Insulation resistance	Not less than 500MΩ 500V DC										

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

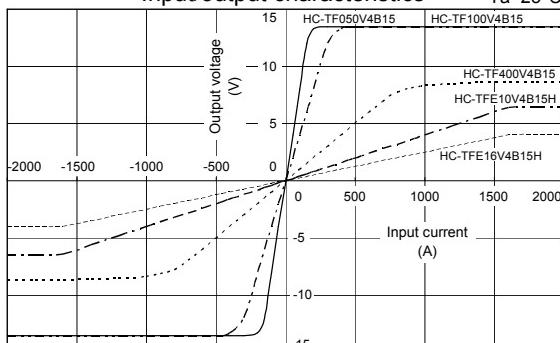
Characteristics chart

HC-TF100V4B15

5μs/div. Time base



Input/output characteristics Ta=25°C



Note: The marks "△" means 0V or 0A.

HC-TTA



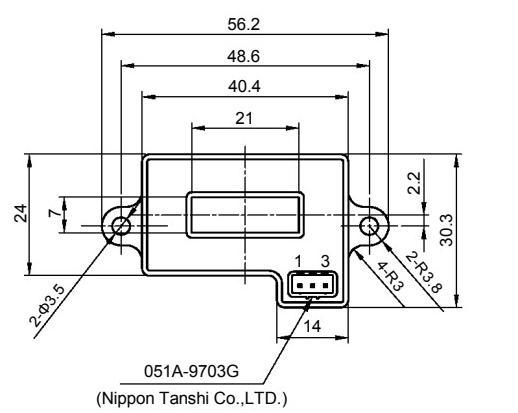
- Rated current 300A ~ 900A
 - Potted products
 - Superior noise-resistance
 - Built-in wire break detector enables detection of broken GND connection

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

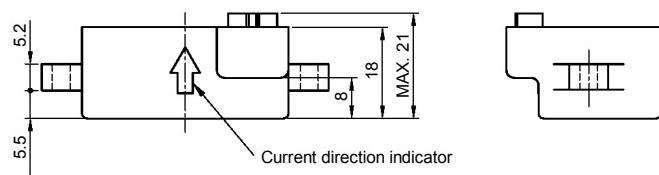
(mm)



Conformable housing and pin
0520-9103 and 17528-M5 (Nippon Tanshi Co.,LTD.)

Terminal No. 1 - (+) terminal
 2 - Output
 3 - GND

Weight : 45g



General tolerance: ± 0.5

Specification

Ta=25°C

Type	HC-TTA300V2PP5	HC-TTA600V2PP5	HC-TTA900V2PP5
Rated current [If]	±300A	±600A	±900A
Saturation current [Is]	±330A	±660A	±990A
Linearity limits	0~±300A	0~±600A	0~±900A
Rated output [Vh]	V0±2V±50mV (RL=10kΩ)		
Residual output [V0]	Within Vcc/2±50mV		
Output linearity	Within ±1%		
Response time	Within 10μs (at di/dt=100A/μs)		
Response performance	Within 10%		
Hysteresis voltage range	Within 30mV		
Output Temp. Coef.	Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±1mV/°C		
Control power supply [Vcc]	+5V±5%		
Consumption current	Within 30mA		
Operating Temp.	-10°C~+80°C		
Storage Temp.	-15°C~+85°C		
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Note2) Energization time of saturation current shall be within 1 second.

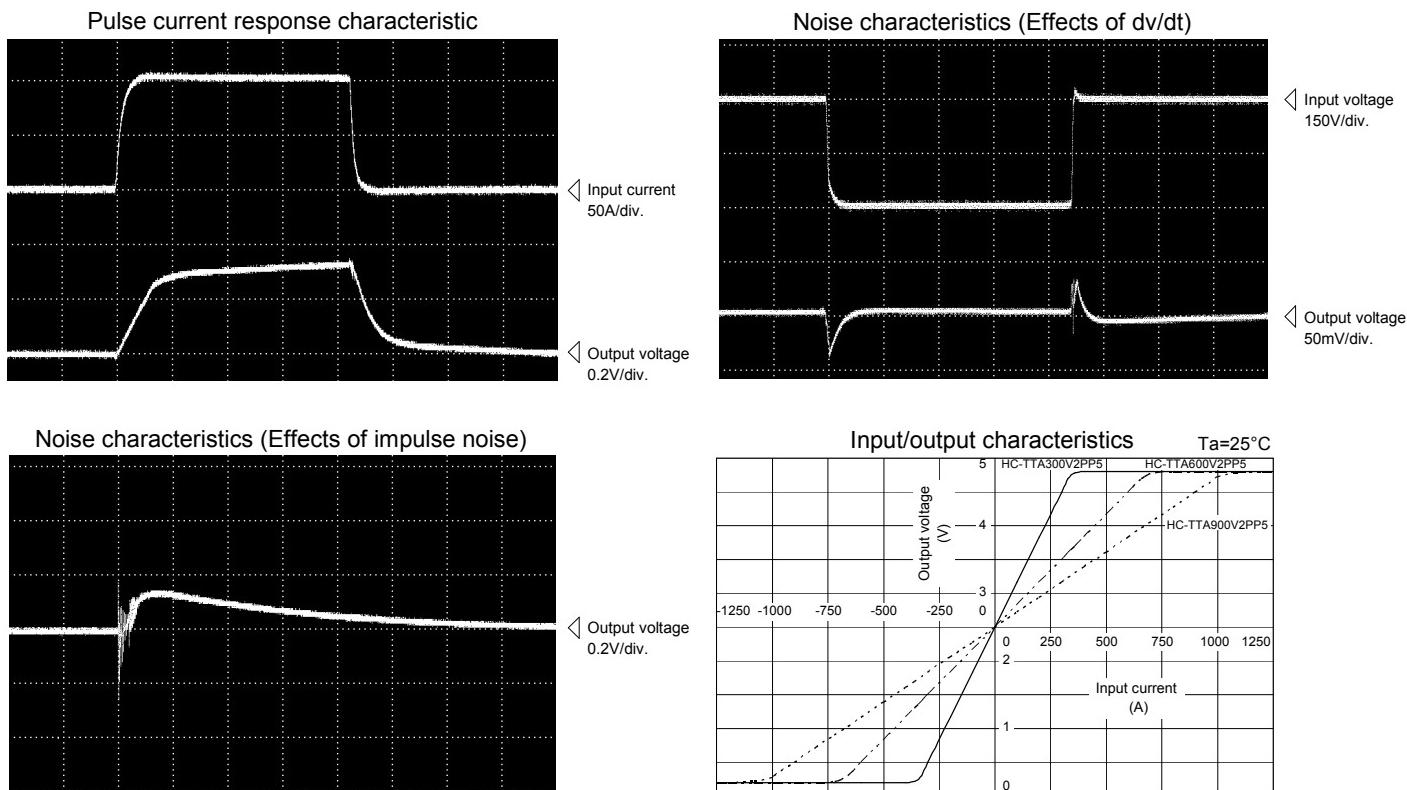
Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Note4) Output is +4.8 V or greater when GND line is disconnected.

Characteristics chart

HC-TTA600V2PP5

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-TTB



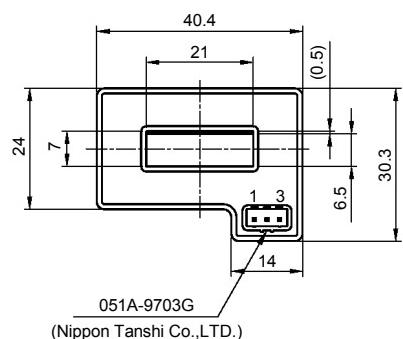
- Rated current 300A ~ 900A
- Potted products
- Superior noise-resistance
- Built-in wire break detector enables detection of broken GND connection

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

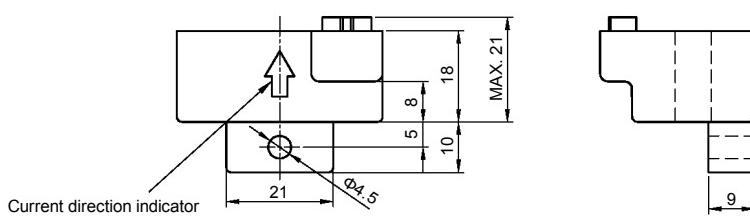
(mm)



Conformable housing and pin
0520-9103 and 17528-M5 (Nippon Tanshi Co.,LTD.)

Terminal No. 1 - (+) terminal
2 - Output
3 - GND

Weight : 47g



General tolerance: ±0.5

Specification

Ta=25°C

Type	HC-TTB300V2PP5	HC-TTB600V2PP5	HC-TTB900V2PP5
Rated current [If]	±300A	±600A	±900A
Saturation current [Is]	±330A	±660A	±990A
Linearity limits	0~±300A	0~±600A	0~±900A
Rated output [Vh]	V0±2V±50mV (RL=10kΩ)		
Residual output [V0]	Within Vcc/2±50mV		
Output linearity	Within ±1%		
Response time	Within 10μs (at di/dt=100A/μs)		
Response performance	Within 10%		
Hysteresis voltage range	Within 30mV		
Output Temp. Coef.	Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±1mV/°C		
Control power supply [Vcc]	+5V±5%		
Consumption current	Within 30mA		
Operating Temp.	-10°C~+80°C		
Storage Temp.	-15°C~+85°C		
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Note2) Energization time of saturation current shall be within 1 second.

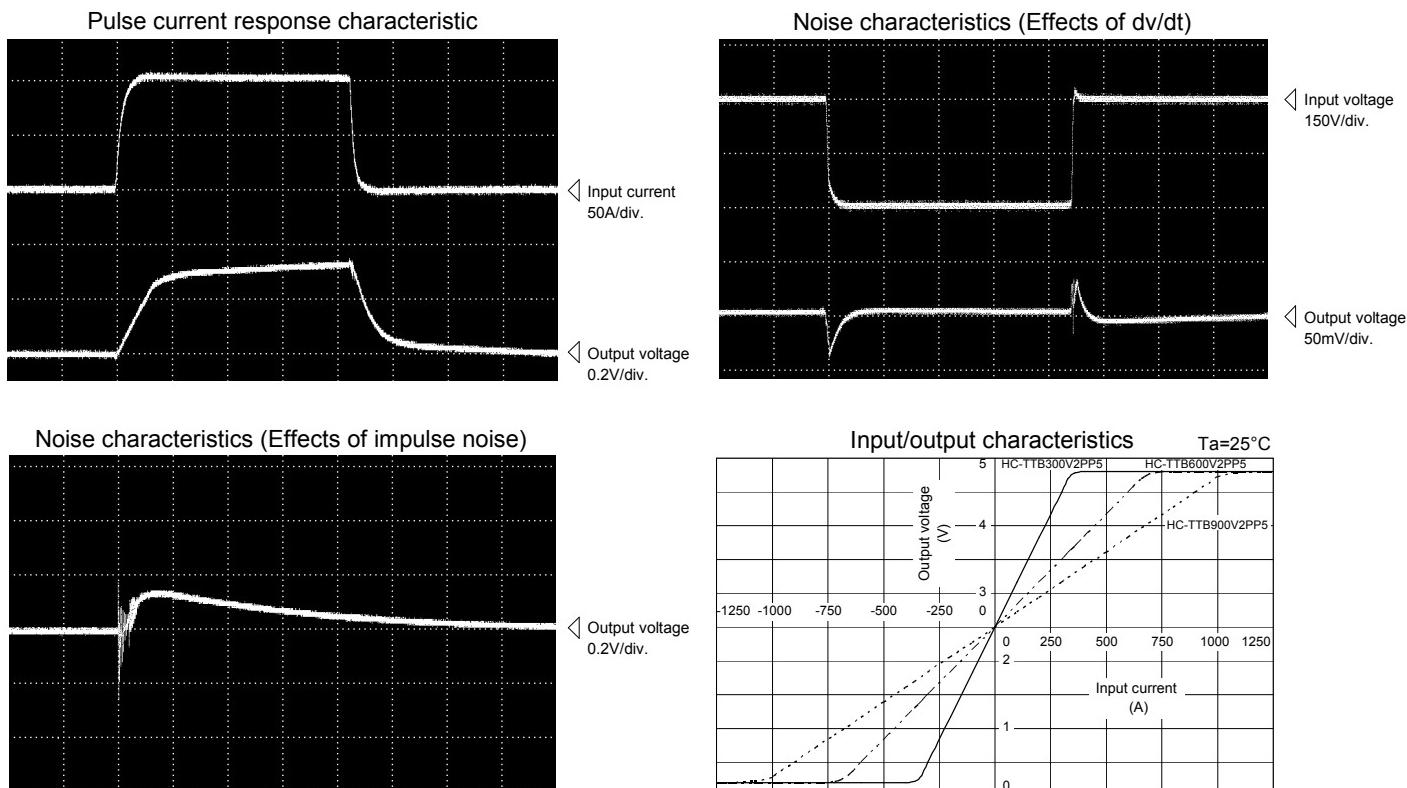
Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Note4) Output is +4.8 V or greater when GND line is disconnected.

Characteristics chart

HC-TTB600V2PP5

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-SL



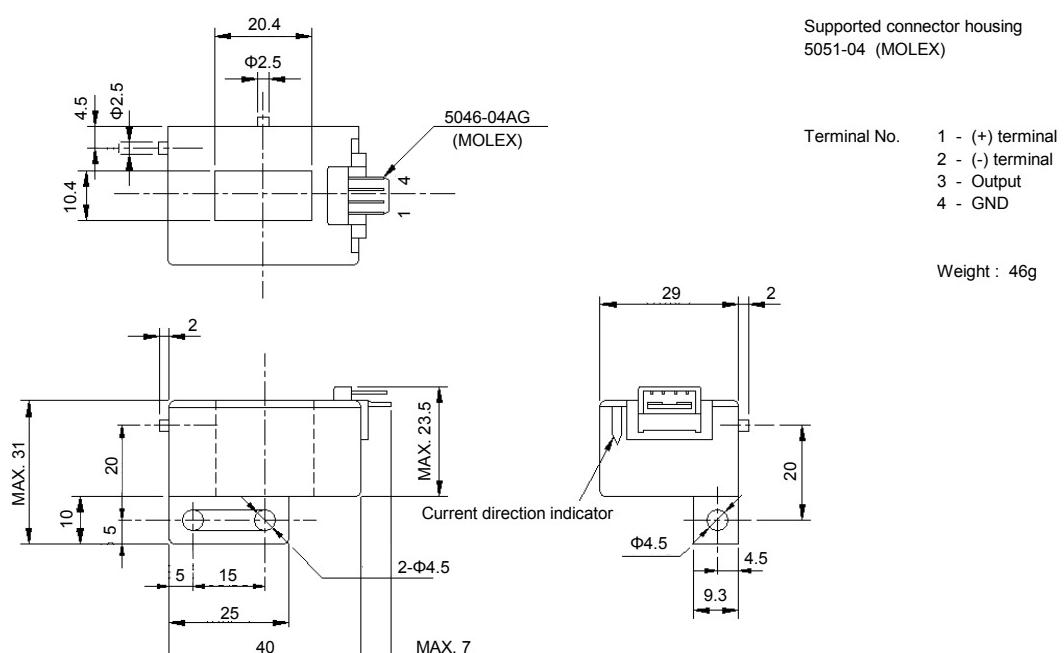
- Rated current 50A ~ 800A
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Specification

Ta=25°C

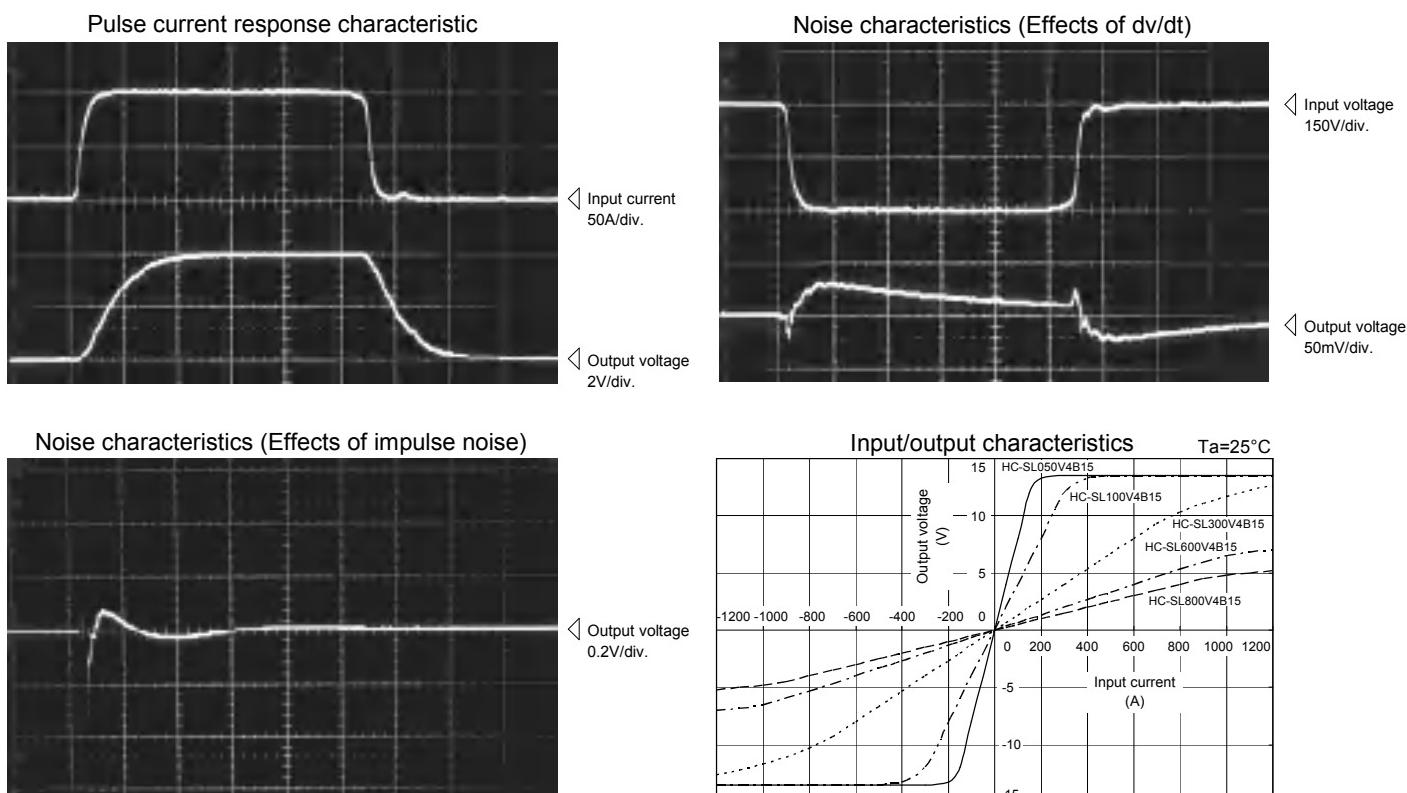
Type	HC-SL050V4B15	HC-SL100V4B15	HC-SL300V4B15	HC-SL600V4B15	HC-SL800V4B15
Rated current [If]	±50A	±100A	±300A	±600A	±800A
Saturation current [Is]	±150A	±300A	±900A	±1000A	±1000A
Linearity limits	0~±150A	0~±300A	0~±700A	0~±900A	0~±900A
Rated output [Vh]	±4V±1.5% (RL=10kΩ)		±4V±1% (RL=10kΩ)		
Residual output [Vo]	Within ±50mV		Within ±30mV		
Output linearity			Within ±1%		
Response time		Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)			
Response performance			Within 10%		
Hysteresis voltage range			Within 30mV		
Output Temp. Coef.			Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±3mV/°C	Within ±1.5mV/°C		Within ±1mV/°C	
Control power supply			±15V±5%		
Consumption current			Within 30mA		
Operating Temp.			-10°C~+80°C		
Storage Temp.			-15°C~+85°C		
Dielectric withstand voltage		2500V AC 50/60Hz 1minute			
Insulation resistance			Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-SL100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-SN



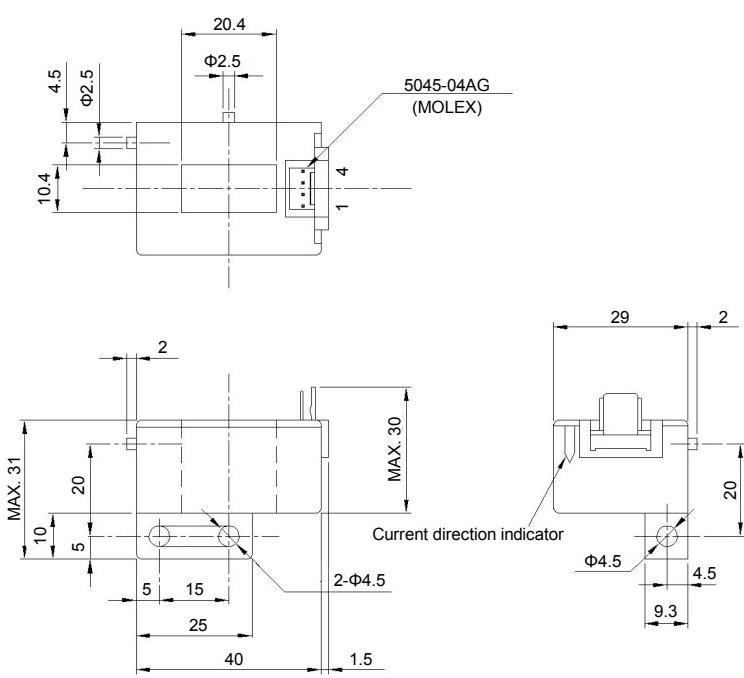
- Rated current 50A ~ 800A
- Superior noise-resistance
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Supported connector housing
5051-04 (MOLEX)

Terminal No. 1 - (+) terminal
2 - (-) terminal
3 - Output
4 - GND

Weight : 46g

General tolerance: ±0.5

Specification

Ta=25°C

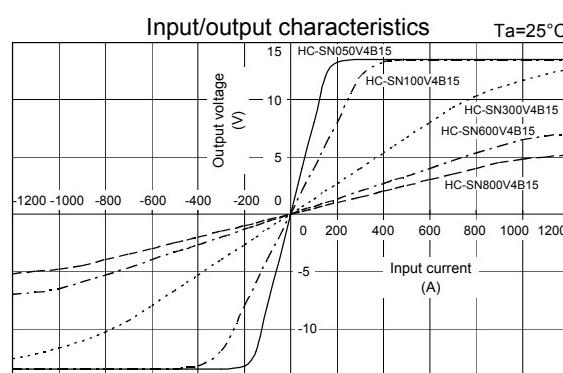
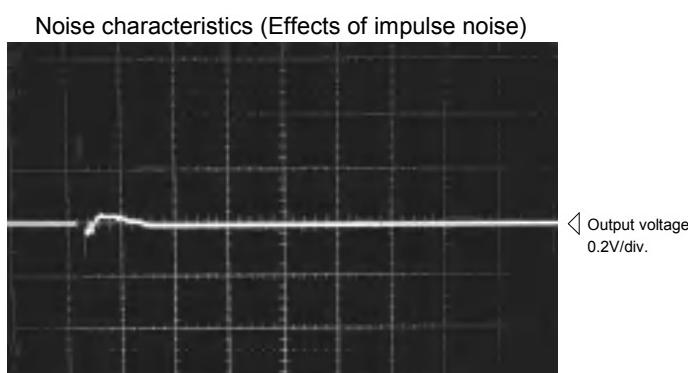
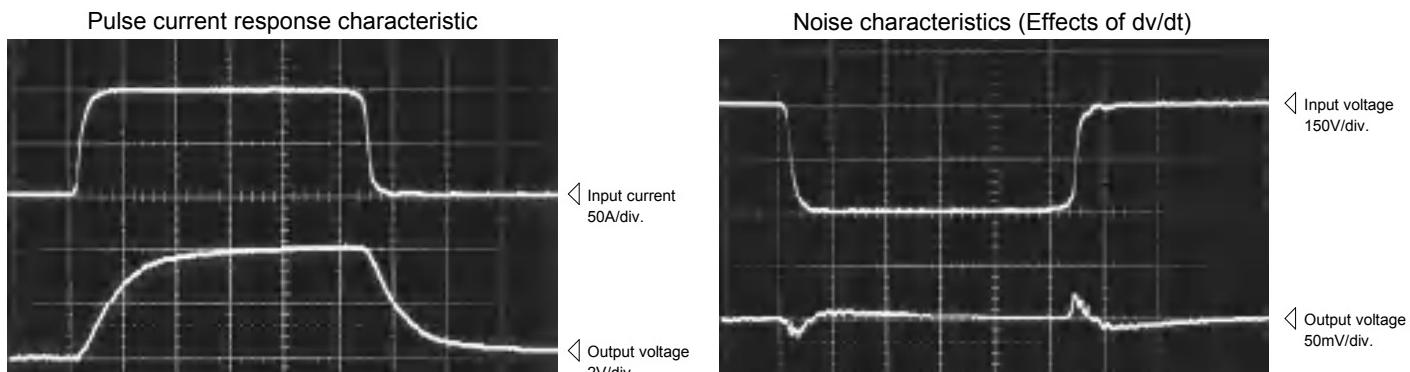
Type	HC-SN050V4B15	HC-SN100V4B15	HC-SN300V4B15	HC-SN600V4B15	HC-SN800V4B15
Rated current [If]	±50A	±100A	±300A	±600A	±800A
Saturation current [Is]	±150A	±300A	±700A	±1000A	±1000A
Linearity limits	0~±150A	0~±300A	0~±450A	0~±900A	0~±900A
Rated output [Vh]	±4V±1.5% (RL=10kΩ)		±4V±1% (RL=10kΩ)		
Residual output [Vo]	Within ±50mV		Within ±30mV		
Output linearity			Within ±1%		
Response time		Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)			
Response performance			Within 10%		
Hysteresis voltage range			Within 30mV		
Output Temp. Coef.			Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±3mV/°C	Within ±1.5mV/°C		Within ±1mV/°C	
Control power supply			±15V±5%		
Consumption current			Within 30mA		
Operating Temp.			-10°C~+80°C		
Storage Temp.			-15°C~+85°C		
Dielectric withstand voltage		2500V AC 50/60Hz 1minute			
Insulation resistance			Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-SN100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-TN



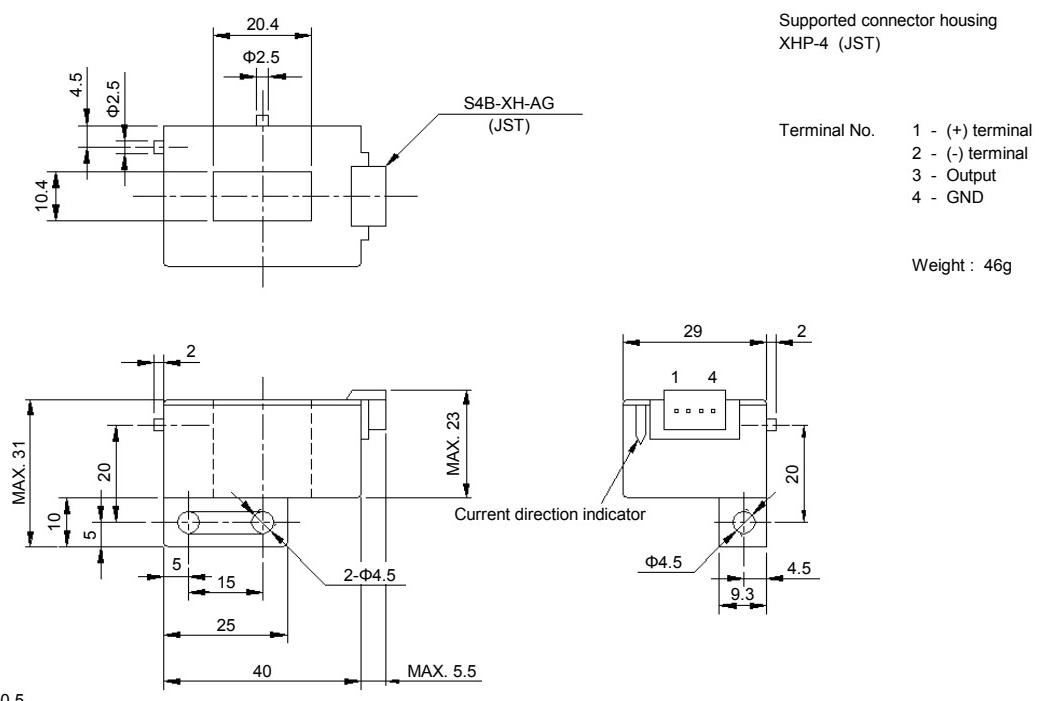
- Rated current 50A ~ 800A
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Specification

Ta=25°C

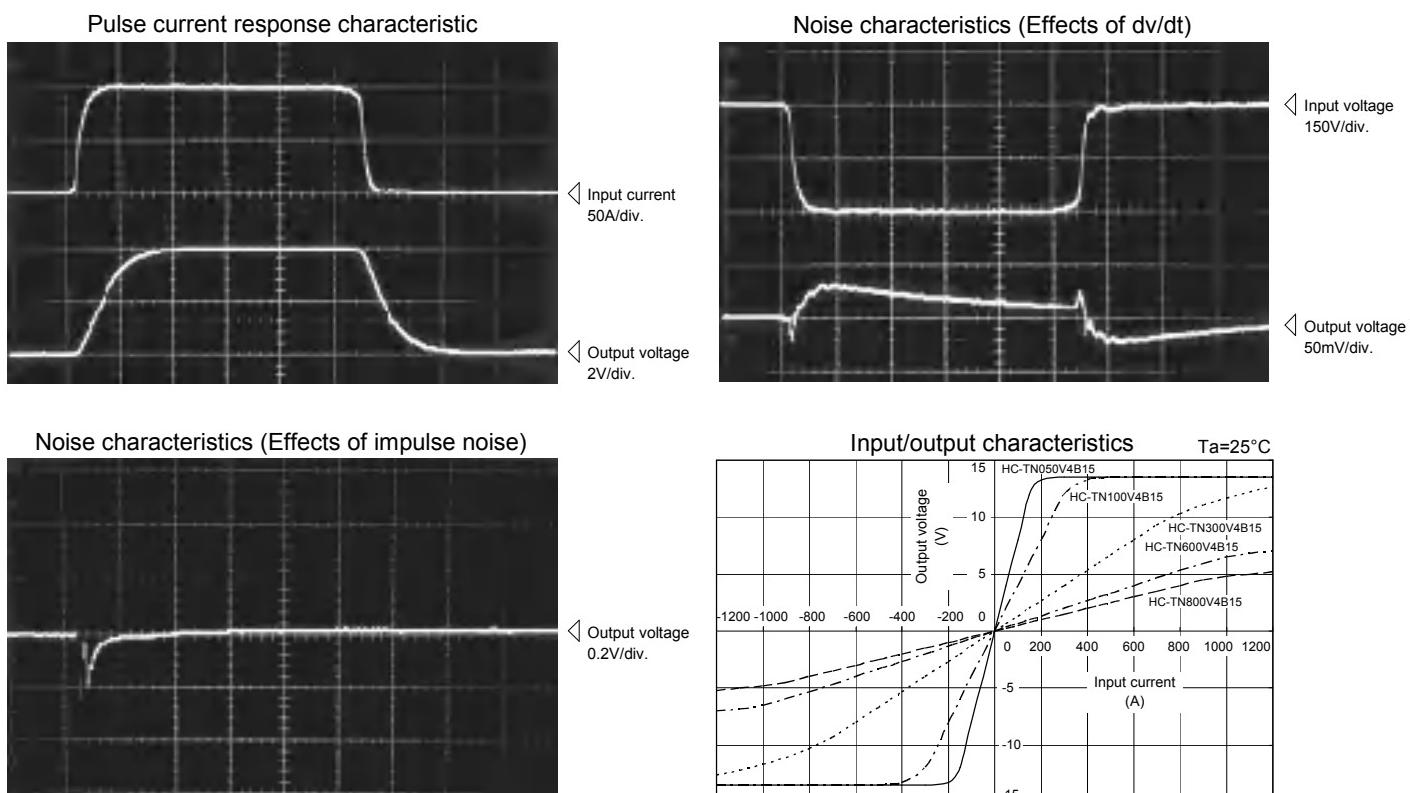
Type	HC-TN050V4B15	HC-TN100V4B15	HC-TN300V4B15	HC-TN600V4B15	HC-TN800V4B15
Rated current [If]	±50A	±100A	±300A	±600A	±800A
Saturation current [Is]	±150A	±300A	±900A	±1000A	±1000A
Linearity limits	0~±150A	0~±300A	0~±700A	0~±900A	0~±900A
Rated output [Vh]	±4V±1.5% (RL=10kΩ)		±4V±1% (RL=10kΩ)		
Residual output [Vo]	Within ±50mV		Within ±30mV		
Output linearity			Within ±1%		
Response time		Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)			
Response performance			Within 10%		
Hysteresis voltage range			Within 30mV		
Output Temp. Coef.			Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±3mV/°C	Within ±1.5mV/°C		Within ±1mV/°C	
Control power supply			±15V±5%		
Consumption current			Within 30mA		
Operating Temp.			-10°C~+80°C		
Storage Temp.			-15°C~+85°C		
Dielectric withstand voltage		2500V AC 50/60Hz 1minute			
Insulation resistance			Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-TN100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-TS



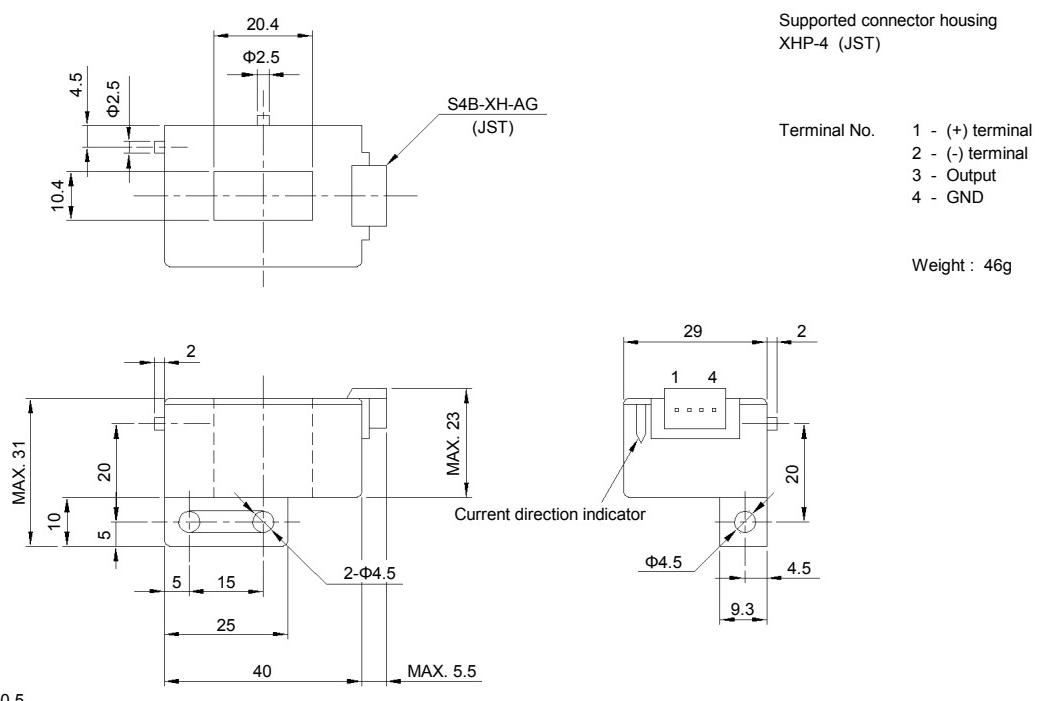
- Rated current 50A ~ 800A
- Superior noise-resistance
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Specification

Ta=25°C

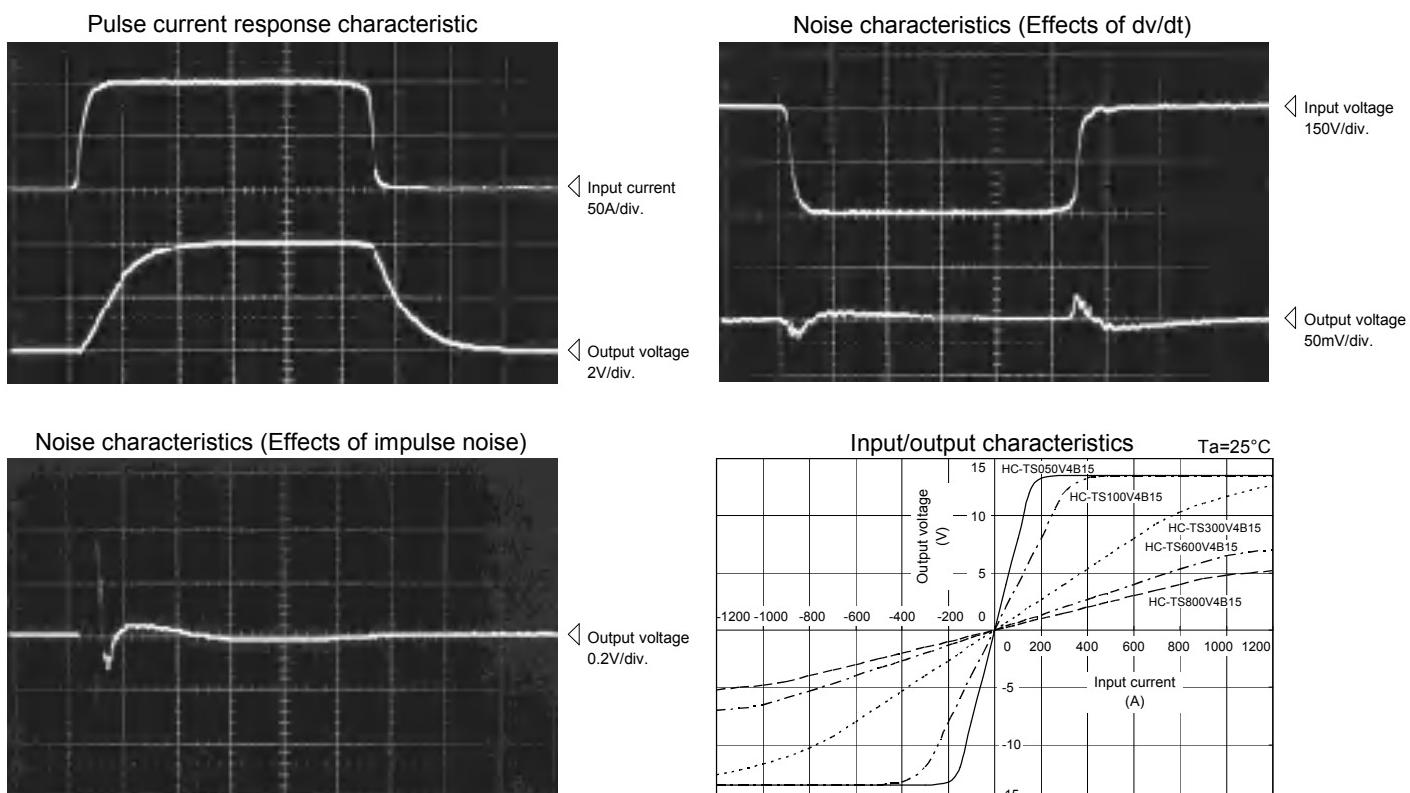
Type	HC-TS050V4B15	HC-TS100V4B15	HC-TS300V4B15	HC-TS600V4B15	HC-TS800V4B15
Rated current [If]	±50A	±100A	±300A	±600A	±800A
Saturation current [Is]	±150A	±300A	±900A	±1000A	±1000A
Linearity limits	0~±150A	0~±300A	0~±700A	0~±900A	0~±900A
Rated output [Vh]	±4V±1.5% (RL=10kΩ)		±4V±1% (RL=10kΩ)		
Residual output [Vo]	Within ±50mV		Within ±30mV		
Output linearity			Within ±1%		
Response time		Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)			
Response performance			Within 10%		
Hysteresis voltage range			Within 30mV		
Output Temp. Coef.			Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±3mV/°C	Within ±1.5mV/°C		Within ±1mV/°C	
Control power supply			±15V±5%		
Consumption current			Within 30mA		
Operating Temp.			-10°C~+80°C		
Storage Temp.			-15°C~+85°C		
Dielectric withstand voltage		2500V AC 50/60Hz 1minute			
Insulation resistance			Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-TS100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-U



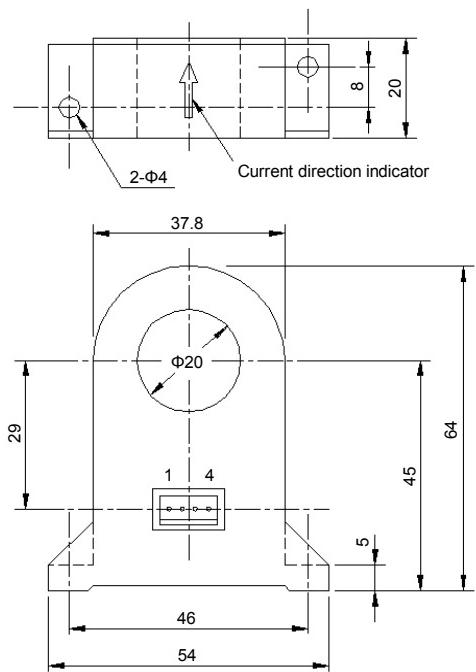
● Rated current 50A ~ 300A

Applications

Inverters, Power supply equipment, NC machine tools, Welders

Dimensions

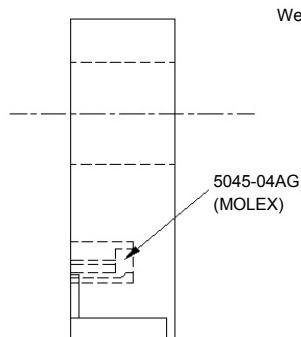
(mm)



Supported connector housing
5051-04 (MOLEX)

Terminal No. 1 - (+) terminal
2 - (-) terminal
3 - Output
4 - GND

Weight : 59g



General tolerance: ±0.5

Specification

Ta=25°C

Type	HC-U050V4B15	HC-U100V4B15	HC-U300V4B15
Rated current [If]	±50A	±100A	±300A
Saturation current [Is]	±150A	±300A	±700A
Linearity limits	0~±150A	0~±300A	0~±600A
Rated output [Vh]	±4V±1.5%	±4V±1%	
Residual output [Vo]	Within ±50mV	Within ±30mV	
Output linearity		Within ±1%	
Response time	Within 10μs (The smaller one on either at $dI/dt = 100A/\mu s$ or $If/\mu s$.)		
Response performance		Within 10%	
Hysteresis voltage range		Within 30mV	
Output Temp. Coef.		Within ±0.08%/°C	
Residual output Temp. Coef.	Within ±2.5mV/°C	Within ±1.5mV/°C	
Control power supply		±15V±5%	
Consumption current		Within 30mA	
Operating Temp.		-10°C~+80°C	
Storage Temp.		-15°C~+85°C	
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

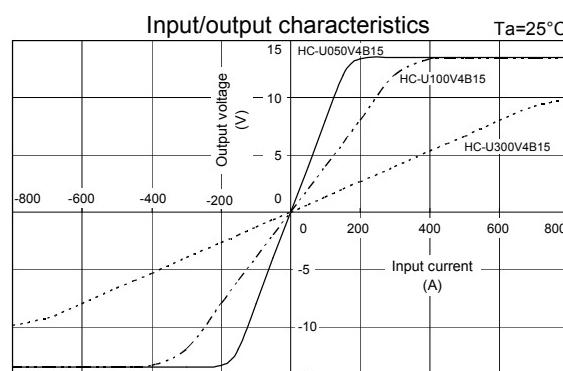
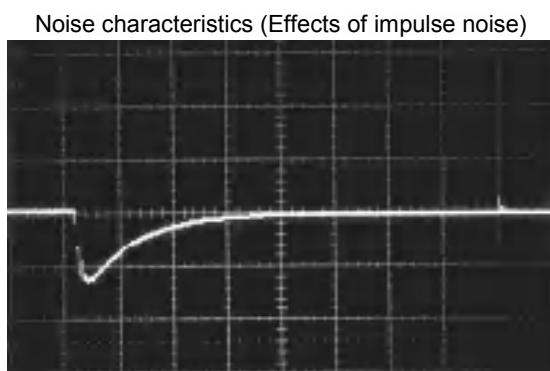
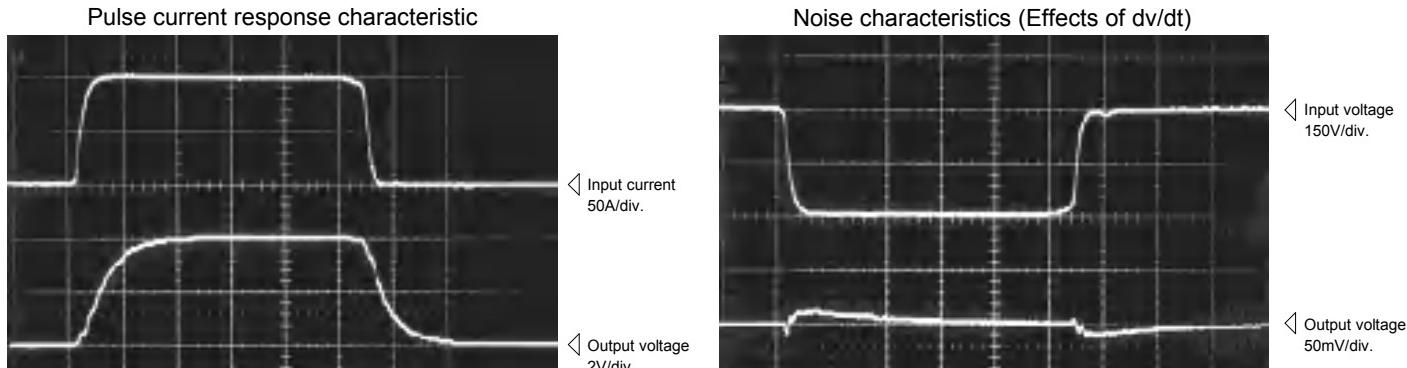
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-U100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-W



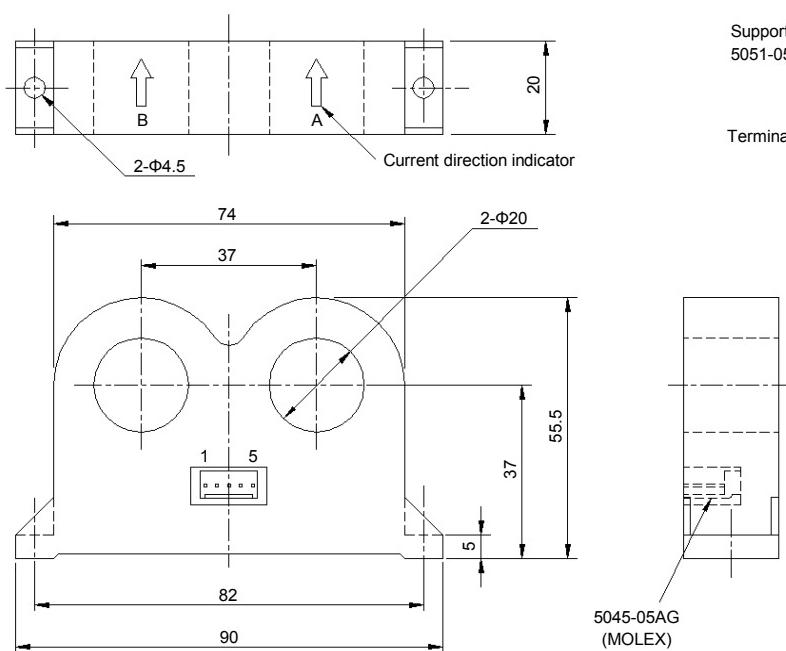
- Rated current 50A ~ 300A
- Two circuits can be measured at the same time
- Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



Supported connector housing
5051-05 (MOLEX)

Terminal No. 1 - GND
 2 - B-phase output
 3 - A-phase output
 4 - (-) terminal
 5 - (+) terminal

Weight : 106g

General tolerance: ±0.5

Specification

Ta=25°C

Type	HC-W050V4B15	HC-W100V4B15	HC-W300V4B15
Rated current [If]	±50A	±100A	±300A
Saturation current [Is]	±150A	±300A	±700A
Linearity limits	0~±150A	0~±300A	0~±600A
Rated output [Vh]	±4V±1.5%	±4V±1%	
Residual output [Vo]	Within ±50mV	Within ±30mV	
Output linearity		Within ±1%	
Response time	Within 10μs (The smaller one on either at $dI/dt = 100A/\mu s$ or $If/\mu s$.)		
Response performance		Within 10%	
Hysteresis voltage range		Within 30mV	
Output Temp. Coef.		Within ±0.08%/°C	
Residual output Temp. Coef.	Within ±2.5mV/°C	Within ±1.5mV/°C	
Control power supply		±15V±5%	
Consumption current		Within 60mA	
Operating Temp.		-10°C~+80°C	
Storage Temp.		-15°C~+85°C	
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

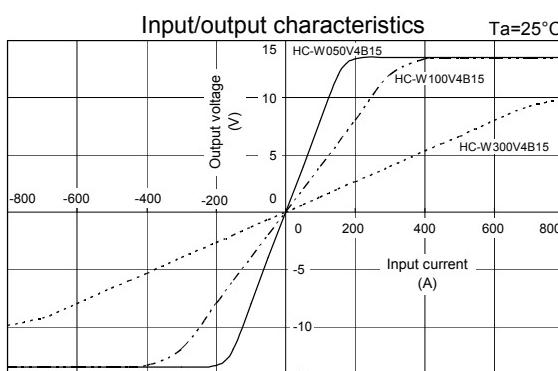
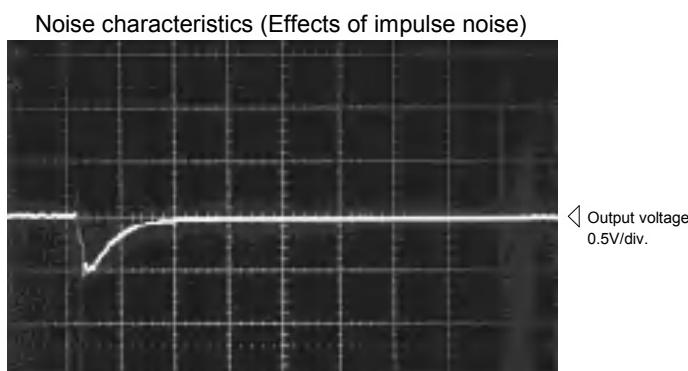
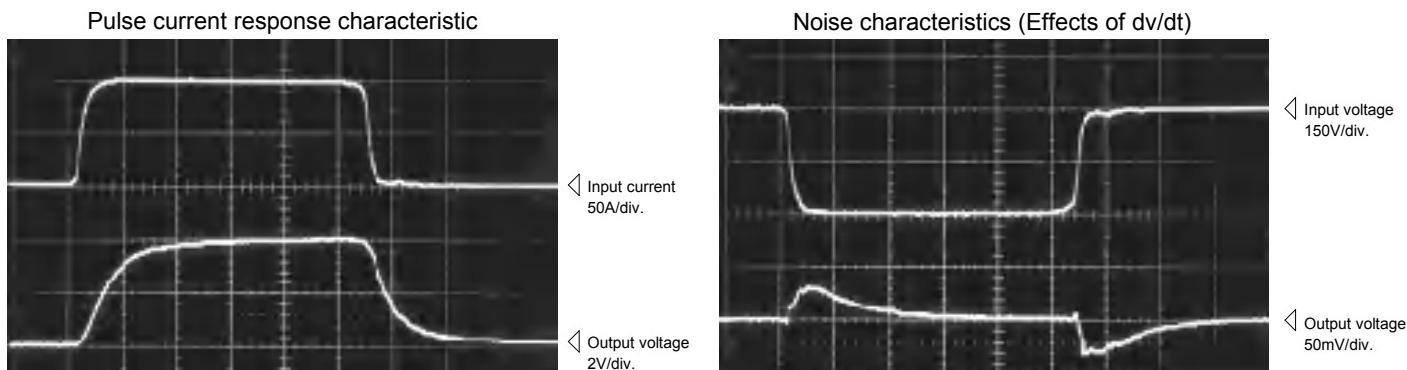
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-W100V4B15

5μs/div. Time base



HC-WT



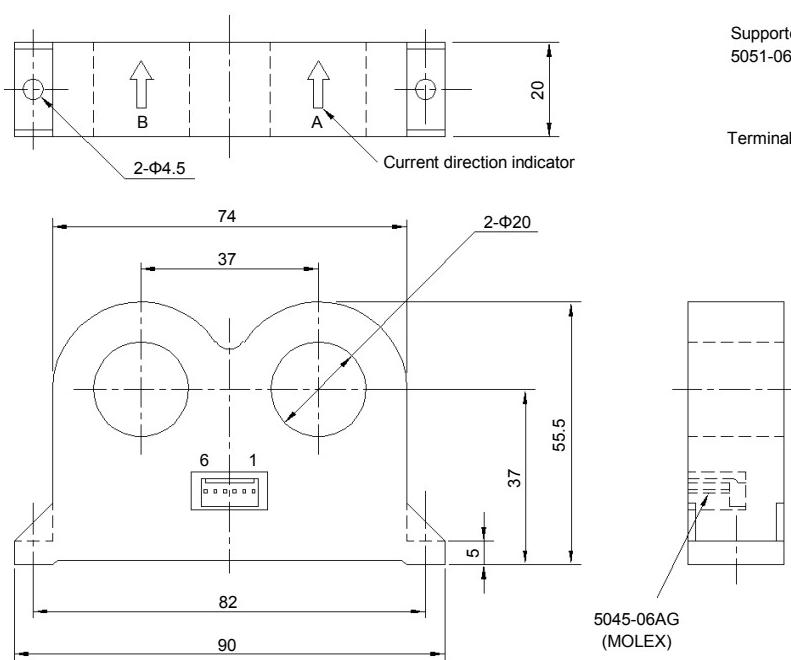
- Rated current 50A ~ 300A
- Two circuits can be measured at the same time
- Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



General tolerance: ±0.5

Specification

Ta=25°C

Type	HC-WT050V4B15	HC-WT100V4B15	HC-WT300V4B15
Rated current [If]	±50A	±100A	±300A
Saturation current [Is]	±150A	±300A	±700A
Linearity limits	0~±150A	0~±300A	0~±600A
Rated output [Vh]	±4V±1.5%	±4V±1%	
Residual output [Vo]	Within ±50mV	Within ±30mV	
Output linearity		Within ±1%	
Response time	Within 10μs (The smaller one on either at $dI/dt = 100A/\mu s$ or $If/\mu s$.)		
Response performance		Within 10%	
Hysteresis voltage range		Within 30mV	
Output Temp. Coef.		Within ±0.08%/°C	
Residual output Temp. Coef.	Within ±2.5mV/°C	Within ±1.5mV/°C	
Control power supply		±15V±5%	
Consumption current		Within 60mA	
Operating Temp.		-10°C~+80°C	
Storage Temp.		-15°C~+85°C	
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

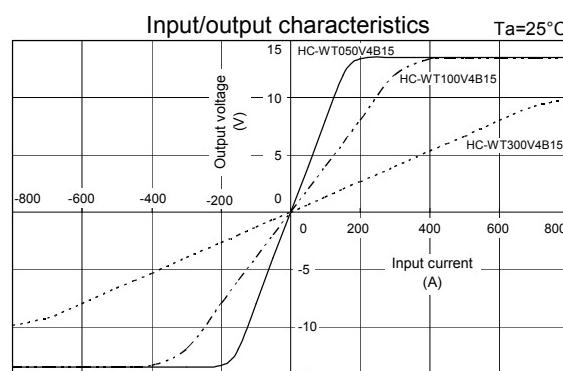
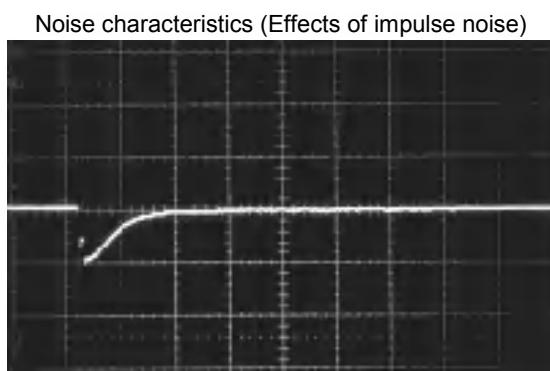
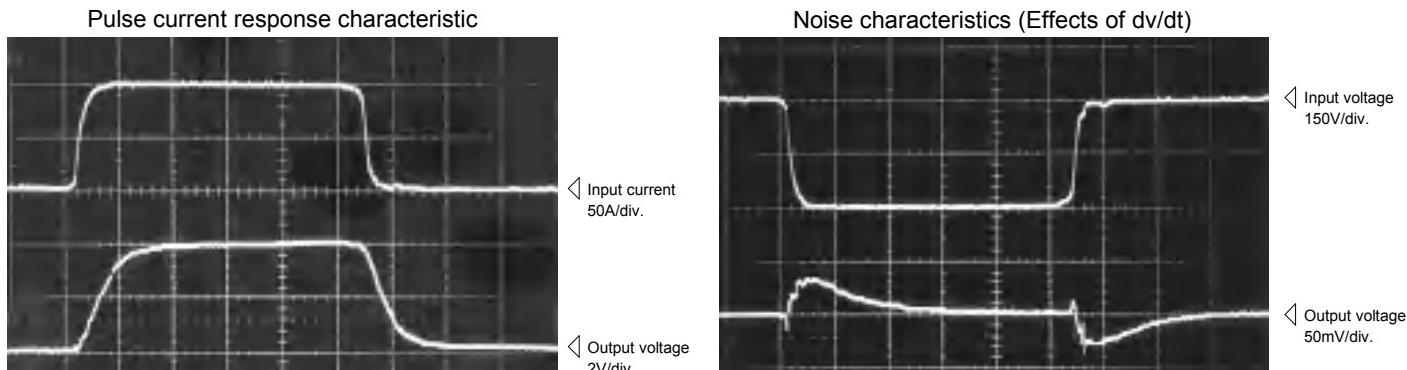
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-WT100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-VT



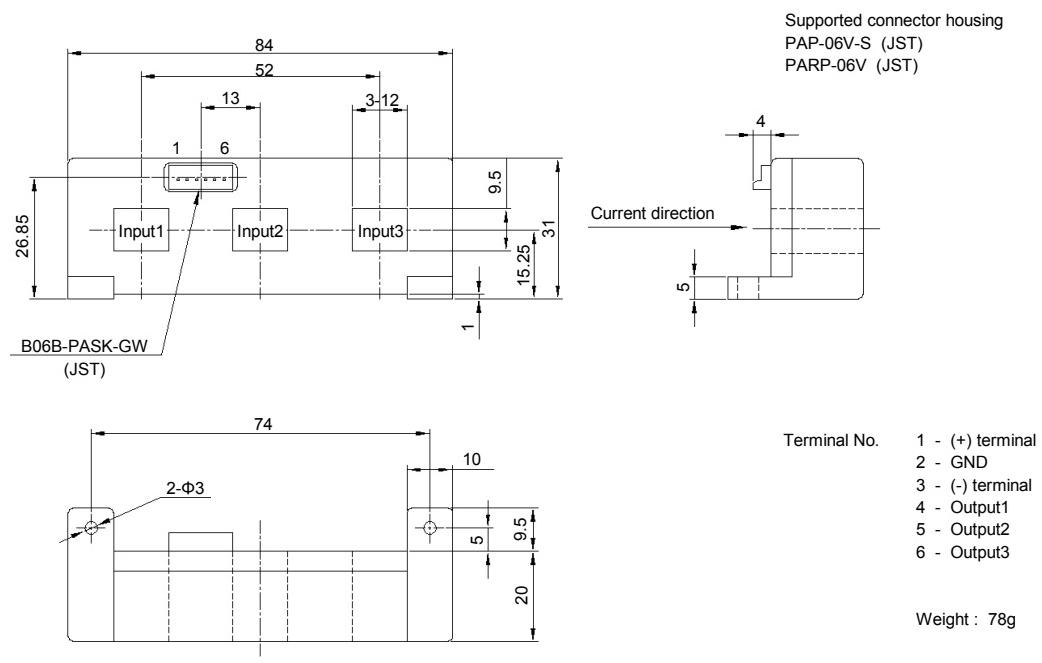
- Rated current 50A ~ 300A
- Superior noise-resistance
- Three circuits can be measured at the same time
- Ferrite core specification also available (Rated current 50A ~ 100A)

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



General tolerance: ±0.5

Specification

Ta=25°C

Type	HC-VT050V4B15	HC-VT100V4B15	HC-VT150V4B15	HC-VT200V4B15	HC-VT300V4B15				
Rated current [If]	±50A	±100A	±150A	±200A	±300A				
Saturation current [Is]	±150A	±300A	±450A	±600A	±600A				
Linearity limits	0~±150A	0~±300A	0~±400A	0~±400A	0~±400A				
Rated output	+If	V0+4V±1% (RL=10kΩ)							
	-If	V0-4V±1% (RL=10kΩ)							
Residual output [Vo]	Within ±70mV	Within ±50mV							
Output linearity	Within ±1%								
Response time	Within 10μs (The smaller one on either at $di/dt = 100A/\mu s$ or $If/\mu s$.)								
Response performance	Within 10%								
Hysteresis voltage range	Within 200mV								
Output Temp. Coef.	Within ±0.1%/°C								
Residual output Temp. Coef.	Within ±4mV/°C	Within ±3mV/°C	Within ±2mV/°C						
Control power supply	±15V±5%								
Consumption current	Within 60mA								
Operating Temp.	-10°C~+80°C								
Storage Temp.	-15°C~+85°C								
Dielectric withstand voltage	2500V AC 50/60Hz 1minute								
Insulation resistance	Not less than 500MΩ 500V DC								

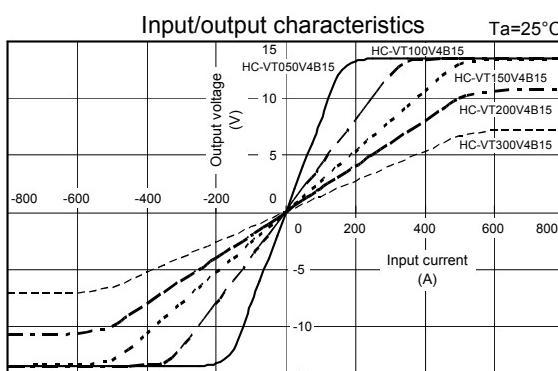
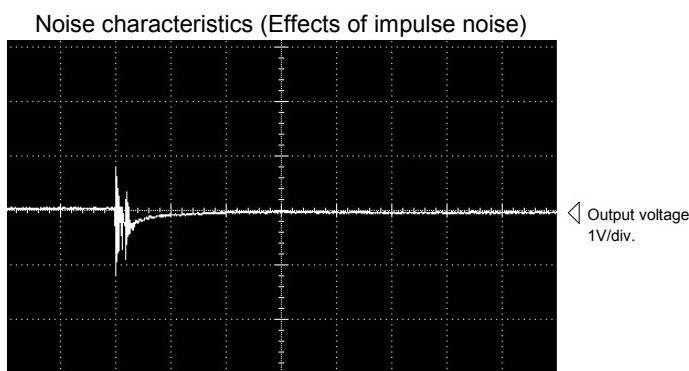
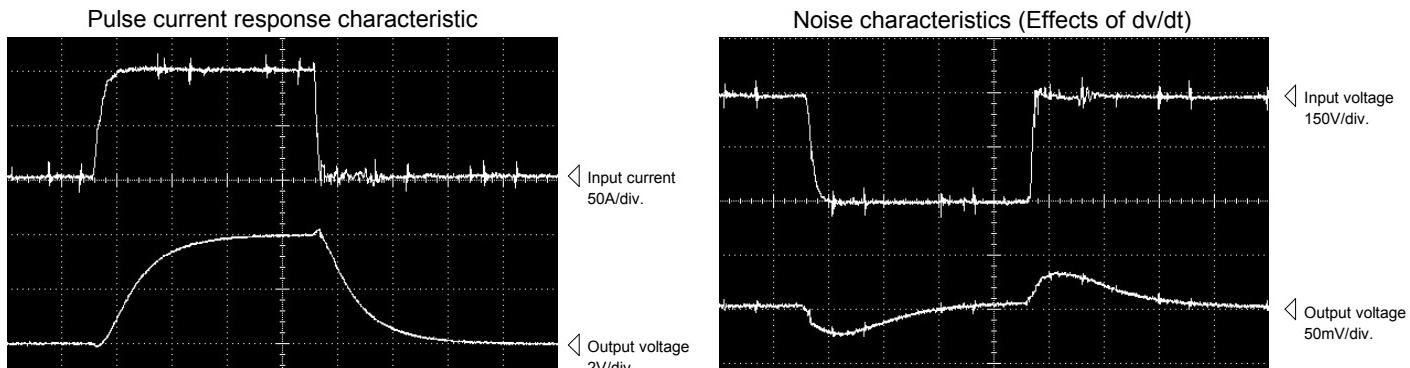
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

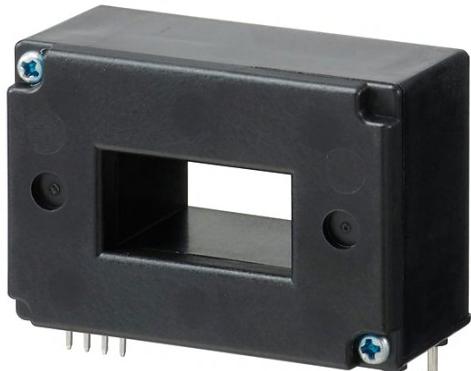
HC-VT100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PZ



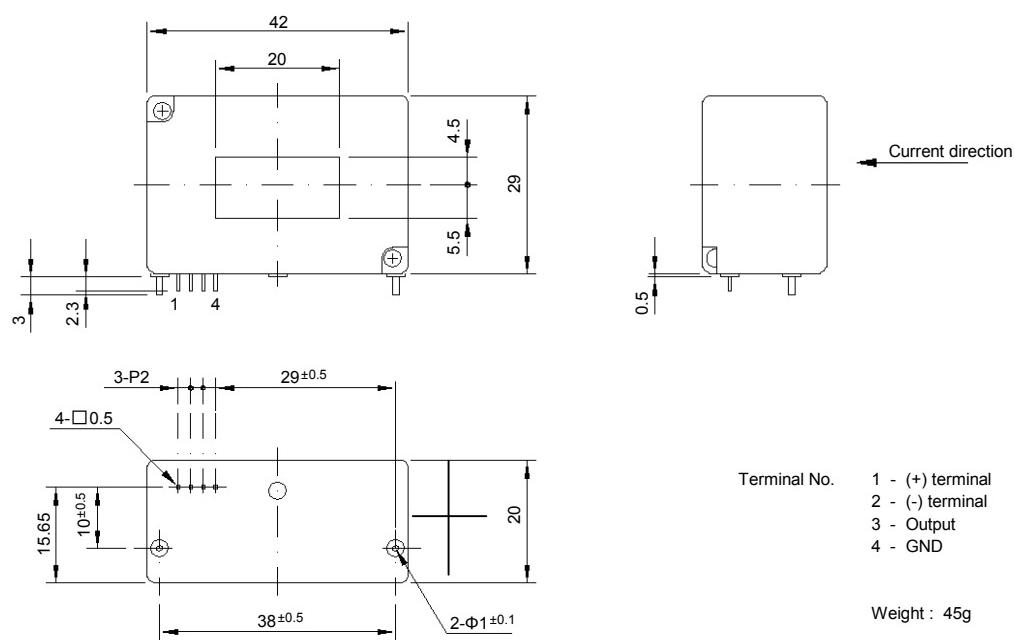
- Rated current 50A ~ 800A
- Models available from low-to medium-capacity
- Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-PZ050V4B15	HC-PZ100V4B15	HC-PZ300V4B15	HC-PZ600V4B15	HC-PZ800V4B15			
Rated current [If]	±50A	±100A	±300A	±600A	±800A			
Saturation current [Is]	±150A	±300A	±900A	±1000A	±1000A			
Linearity limits	0~±150A	0~±300A	0~±700A	0~±800A	0~±800A			
Rated output [Vh]	±4V±1%							
Residual output [Vo]	Within ±50mV							
Output linearity	Within ±1%							
Response time	Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)							
Response performance	Within 10%							
Hysteresis voltage range	Within 200mV							
Output Temp. Coef.	Within ±0.1%/°C							
Residual output Temp. Coef.	Within ±4mV/°C	Within ±2mV/°C	Within ±1mV/°C					
Control power supply	±15V±5%							
Consumption current	Within 30mA							
Operating Temp.	-10°C~+80°C							
Storage Temp.	-15°C~+85°C							
Dielectric withstand voltage	2500V AC 50/60Hz 1minute							
Insulation resistance	Not less than 500MΩ 500V DC							

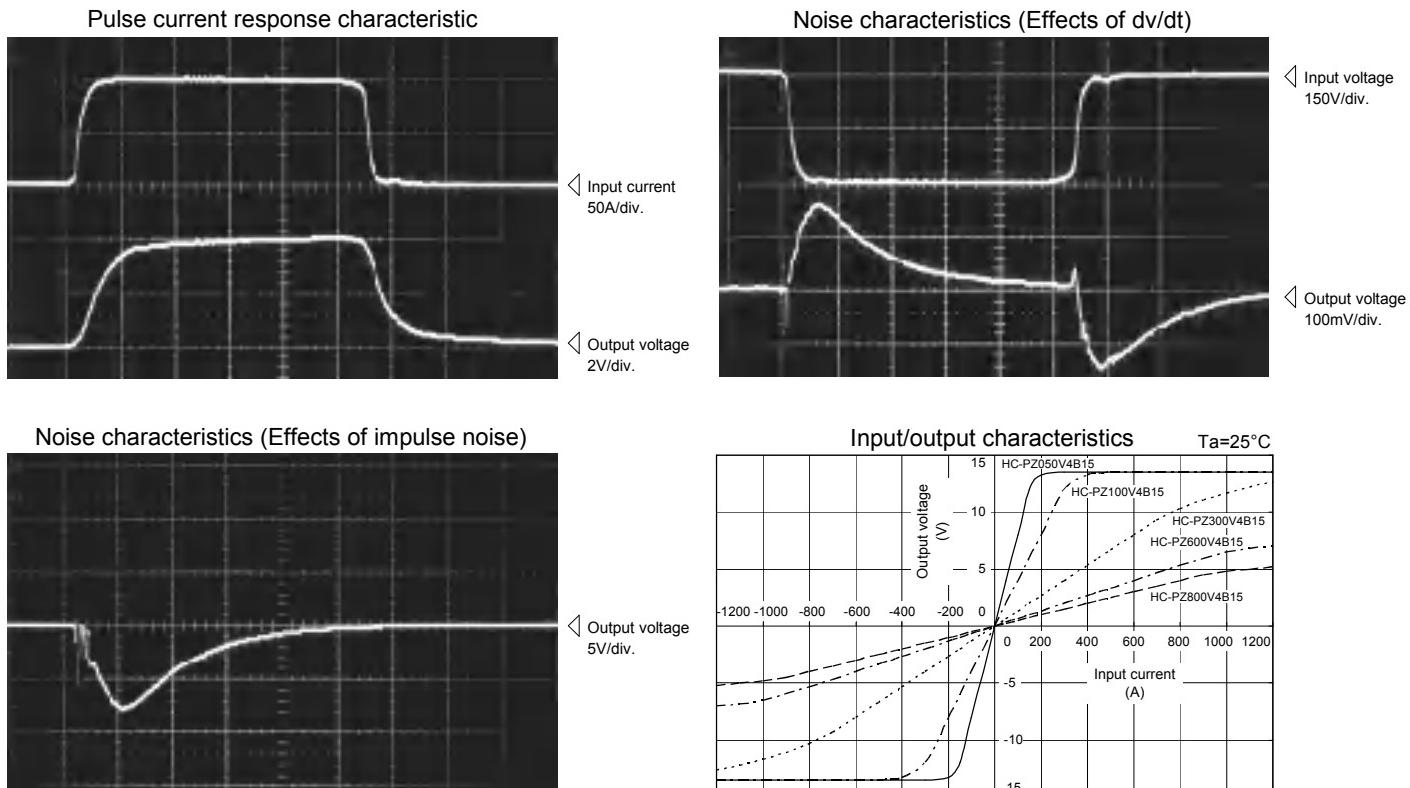
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

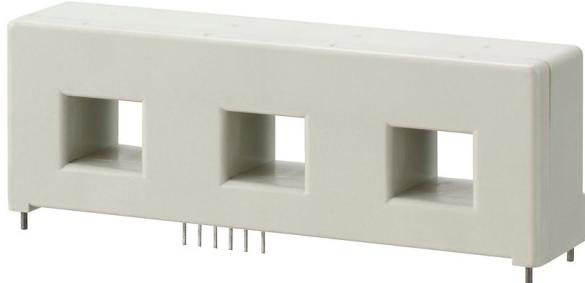
HC-PZ100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PT



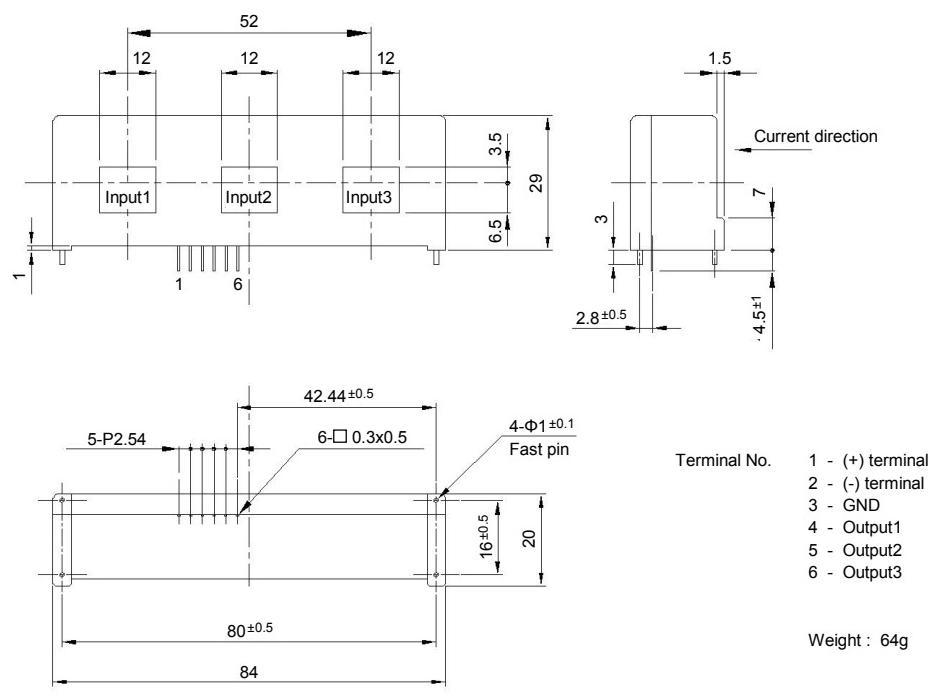
- Rated current 50A ~ 300A
- Three circuits can be measured at the same time
- Ferrite core specification also available (Rated current 50A ~ 100A)
- Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-PT050V4B15	HC-PT100V4B15	HC-PT150V4B15	HC-PT200V4B15	HC-PT300V4B15
Rated current [If]	±50A	±100A	±150A	±200A	±300A
Saturation current [Is]	±150A	±300A	±450A	±600A	±600A
Linearity limits	0~±150A	0~±300A	0~±400A	0~±400A	0~±400A
Rated output [Vh]	±4V±1%				
Residual output [Vo]	Within ±50mV				
Output linearity	Within ±1%				
Response time	Within 10μs (The smaller one on either at $dI/dt = 100A/\mu s$ or $If/\mu s$.)				
Response performance	Within 10%				
Hysteresis voltage range	Within 200mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±4mV/°C	Within ±3mV/°C	Within ±2mV/°C		
Control power supply	±15V±5%				
Consumption current	Within 60mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

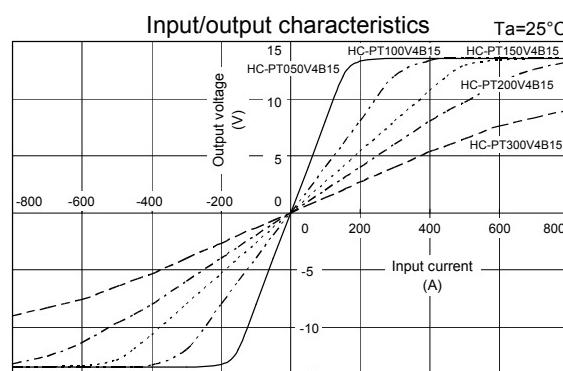
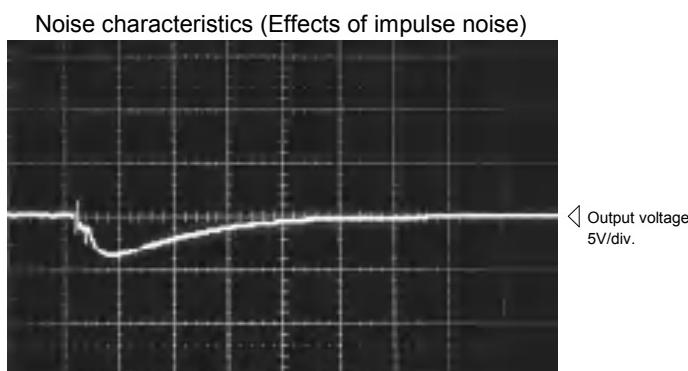
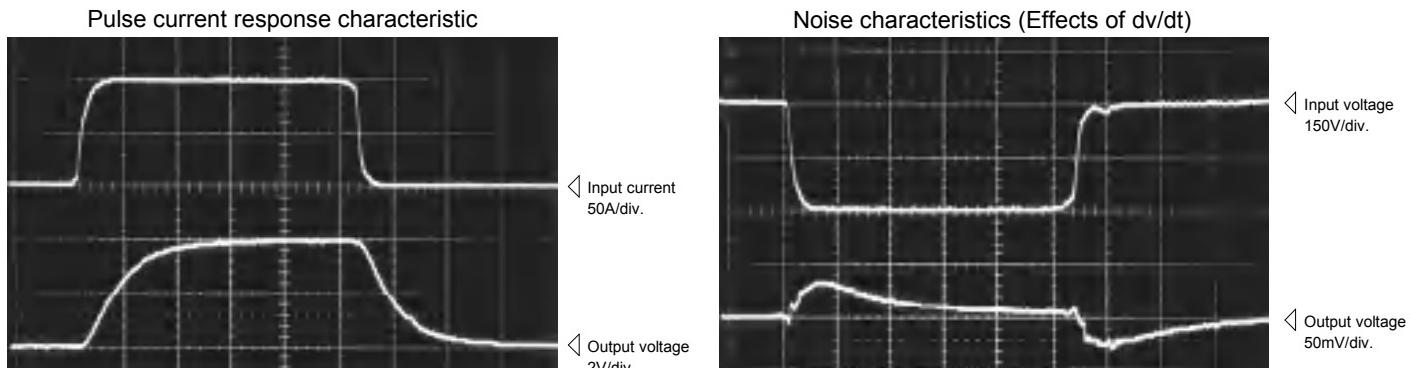
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

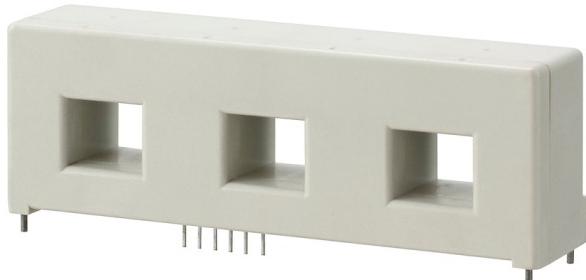
HC-PT100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PTW



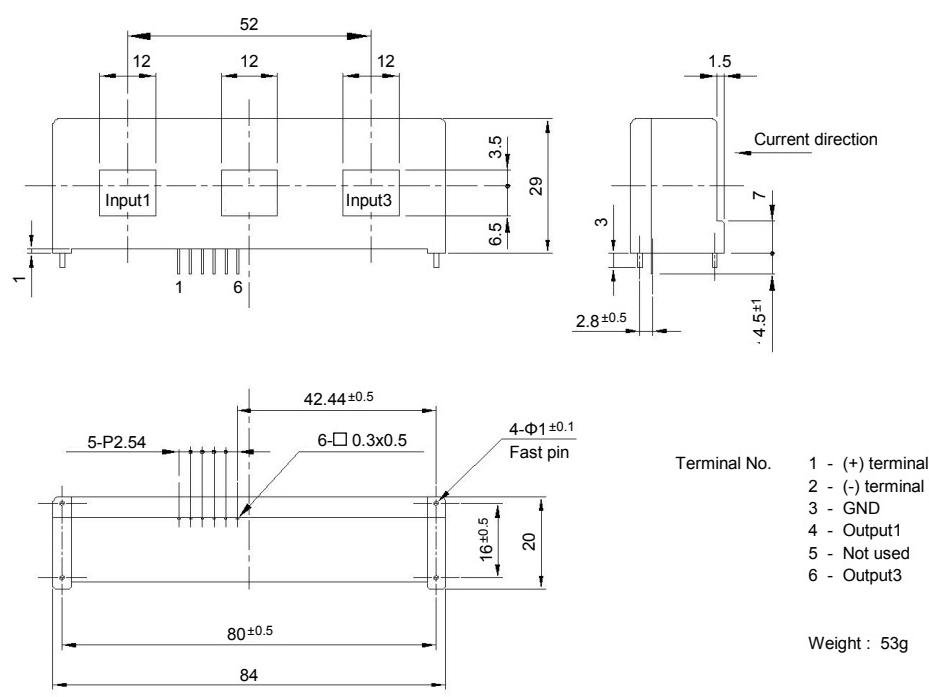
- Rated current 50A ~ 300A
 - Two circuits can be measured at the same time
 - Ferrite core specification also available
(Rated current 50A ~ 100A)
 - Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



General tolerance: ± 0.5

Specification

Ta=25°C

Type	HC-PTW050V4B15	HC-PTW100V4B15	HC-PTW150V4B15	HC-PTW200V4B15	HC-PTW300V4B15
Rated current [If]	±50A	±100A	±150A	±200A	±300A
Saturation current [Is]	±150A	±300A	±450A	±600A	±600A
Linearity limits	0~±150A	0~±300A	0~±400A	0~±400A	0~±400A
Rated output [Vh]	±4V±1%				
Residual output [Vo]	Within ±50mV				
Output linearity	Within ±1%				
Response time	Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)				
Response performance	Within 10%				
Hysteresis voltage range	Within 200mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±4mV/°C	Within ±3mV/°C	Within ±2mV/°C		
Control power supply	±15V±5%				
Consumption current	Within 40mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

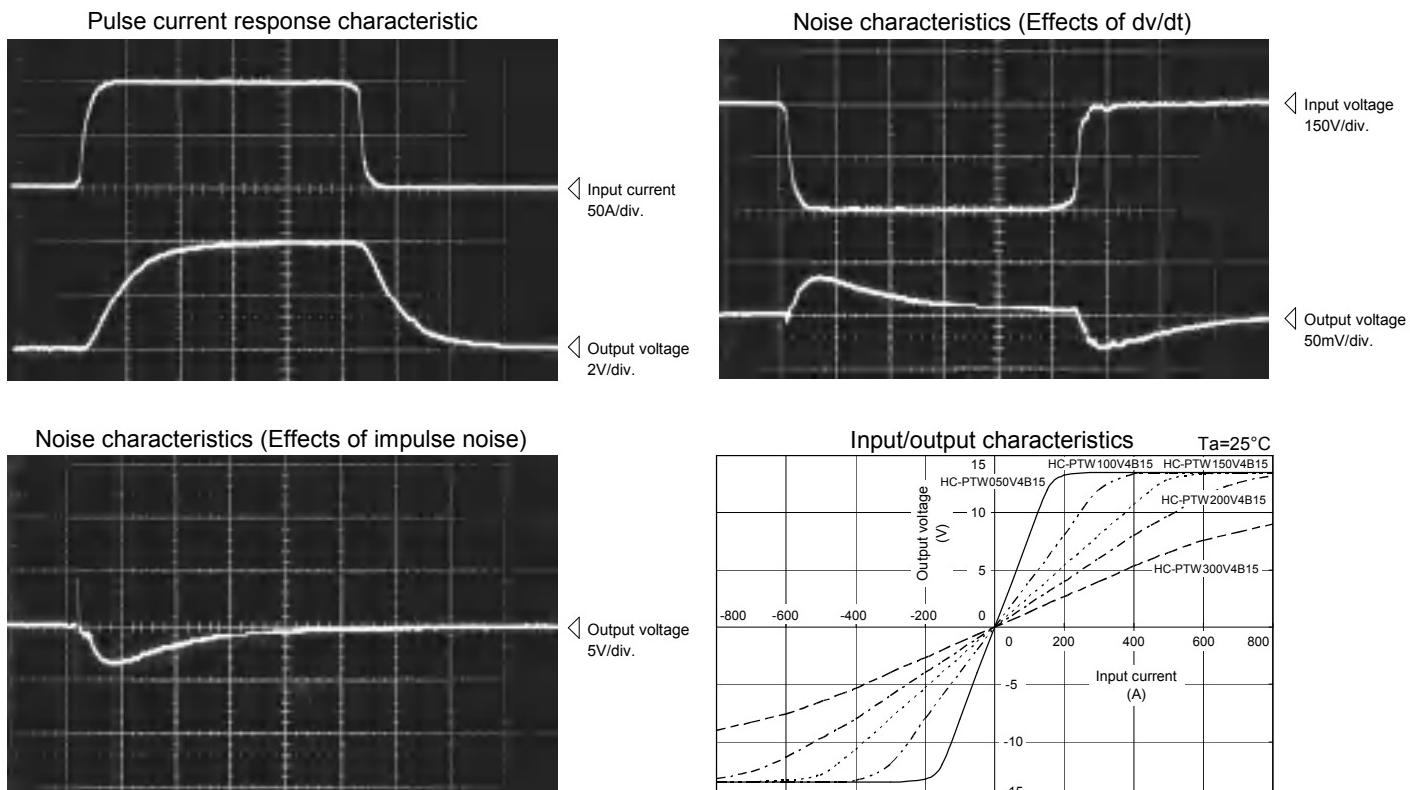
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-PTW100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PG



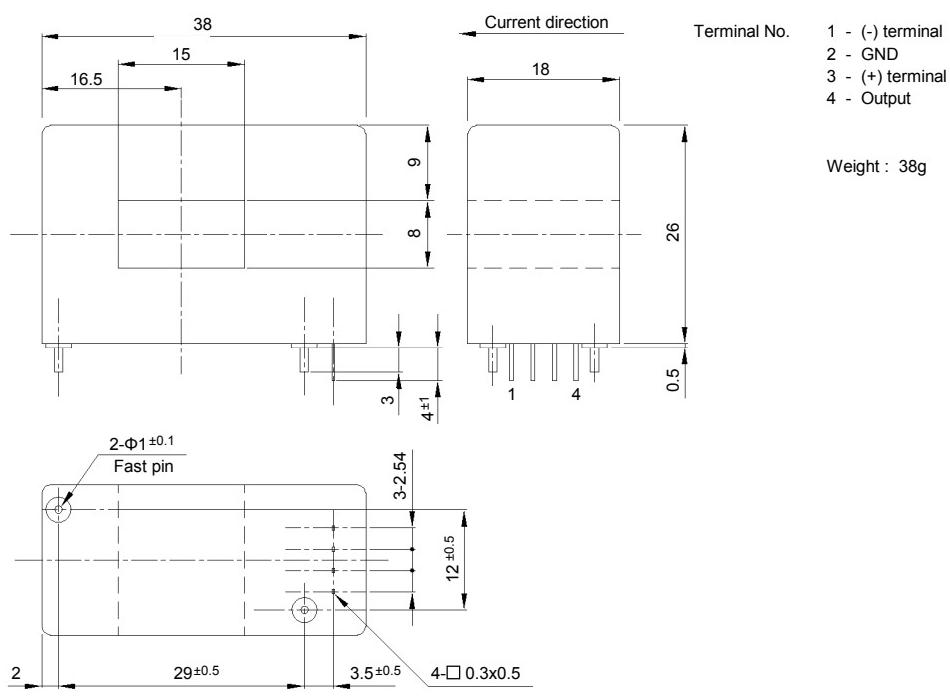
- Rated current 50A ~ 300A
- Superior noise-resistance
- Ferrite core specification also available (Rated current 50A ~ 100A)
- Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-PG050V4B15	HC-PG100V4B15	HC-PG150V4B15	HC-PG200V4B15	HC-PG300V4B15
Rated current [If]	±50A	±100A	±150A	±200A	±300A
Saturation current [Is]	±150A	±300A	±450A	±600A	±900A
Linearity limits	0~±150A	0~±300A	0~±450A	0~±500A	0~±700A
Rated output [Vh]	±4V±1%				
Residual output [Vo]	Within ±50mV				
Output linearity	Within ±1%				
Response time	Within 10μs (The smaller one on either at di/dt = 100A/μs or If/μs.)				
Response performance	Within 10%				
Hysteresis voltage range	Within 100mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±4mV/°C	Within ±3mV/°C	Within ±2mV/°C		
Control power supply	±15V±5%				
Consumption current	Within 30mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

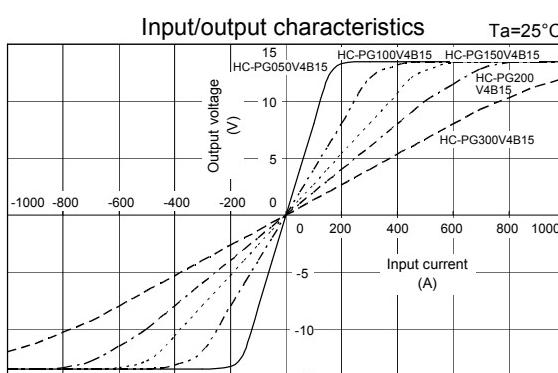
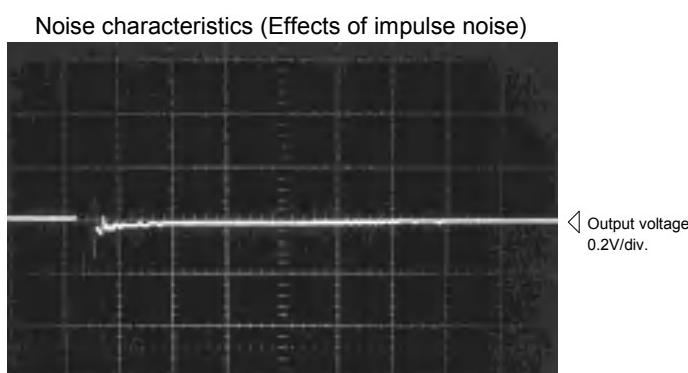
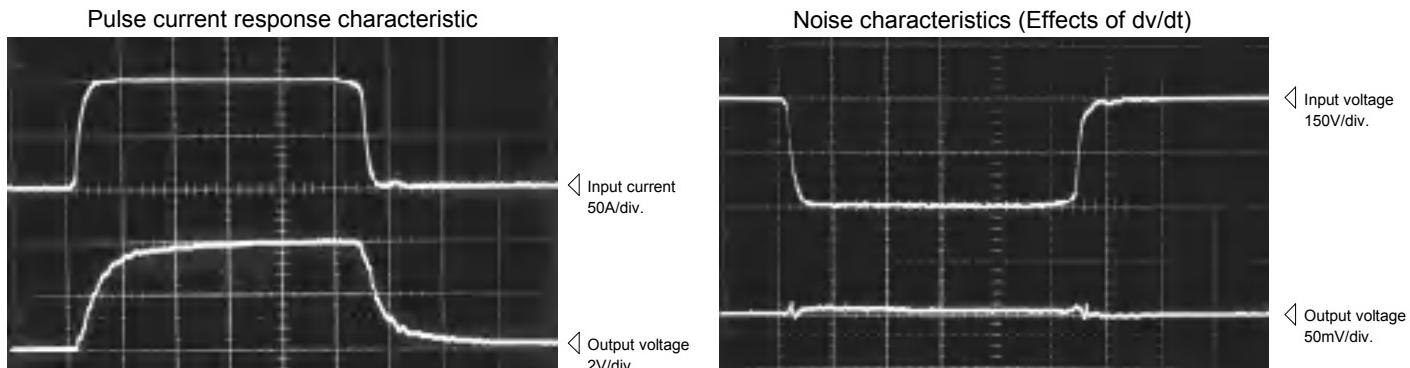
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-PG100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PJ



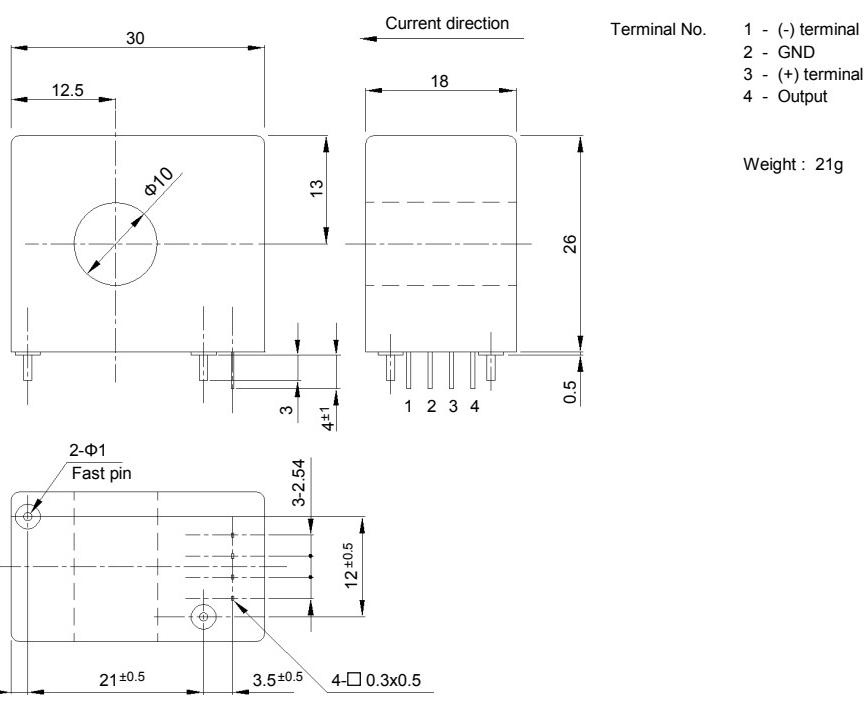
- Rated current 50A ~ 200A
- Superior noise-resistance
- Ferrite core specification also available (Rated current 50A ~ 100A)
- Single-power supplies also available

Applications

Inverters, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	HC-PJ050V4B15	HC-PJ100V4B15	HC-PJ150V4B15	HC-PJ200V4B15
Rated current [If]	±50A	±100A	±150A	±200A
Saturation current [Is]	±150A	±300A	±450A	±600A
Linearity limits	0~±150A	0~±300A	0~±450A	0~±500A
Rated output [Vh]	±4V±1%			
Residual output [Vo]	Within ±50mV			
Output linearity	Within ±1%			
Response time	Within 10μs (The smaller one on either at $dI/dt = 100A/\mu s$ or $If/\mu s$.)			
Response performance	Within 10%			
Hysteresis voltage range	Within 100mV			
Output Temp. Coef.	Within ±0.1%/°C			
Residual output Temp. Coef.	Within ±4mV/°C	Within ±3mV/°C	Within ±2mV/°C	
Control power supply	±15V±5%			
Consumption current	Within 30mA			
Operating Temp.	-10°C~+80°C			
Storage Temp.	-15°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

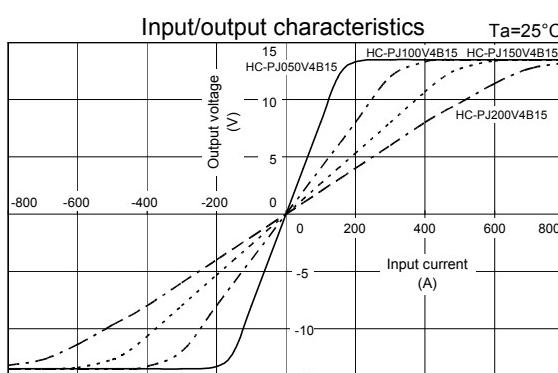
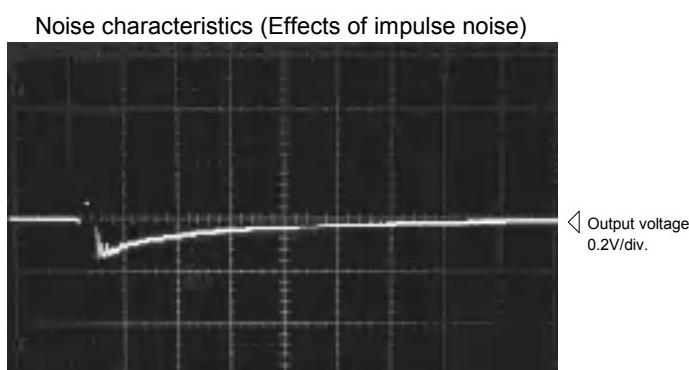
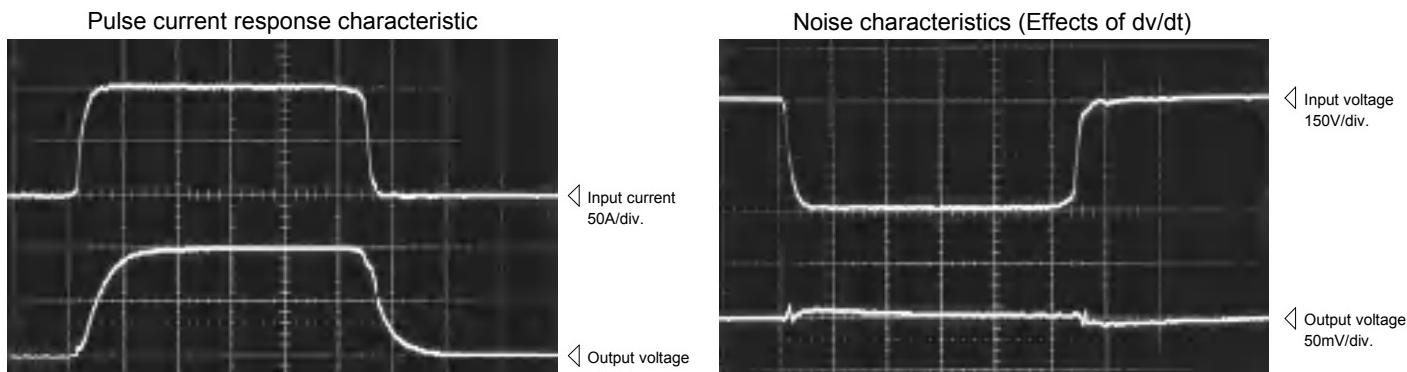
Note1) The indicated rated output is the one when no load is applied.

Note2) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-PJ100V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PVT



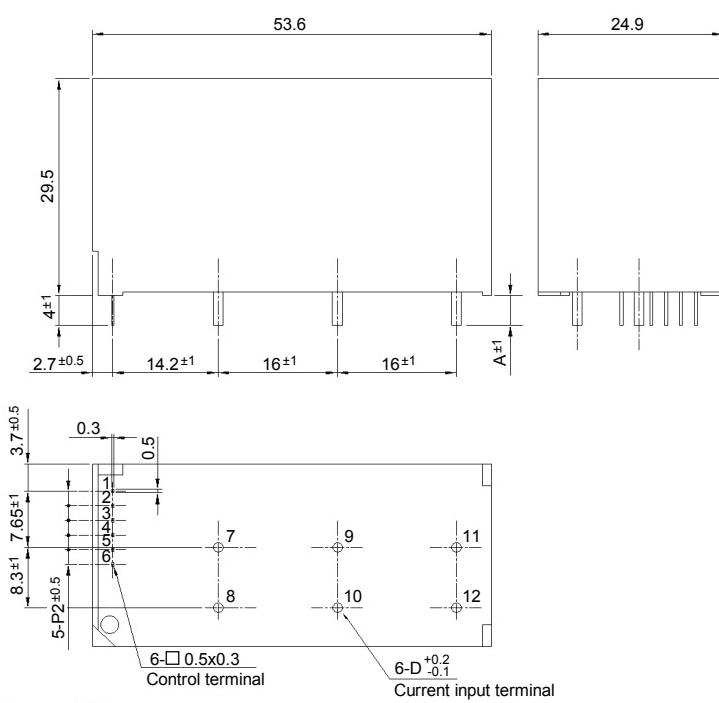
- Rated current 10A ~ 50A
- Well isolated for European Standards
- Three circuits can be measured at the same time

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS)

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D	Width A
Φ0.8	Φ0.8	4
Φ1.0	Φ1.0	4
Φ1.3	Φ1.3	4
Φ1.6	Φ1.6	4

- Terminal No.
- 1 - (+) terminal
 - 2 - (-) terminal
 - 3 - GND
 - 4 - Output1
 - 5 - Output2
 - 6 - Output3
 - 7 - (+) input1
 - 8 - (-) input1
 - 9 - (+) input2
 - 10 - (-) input2
 - 11 - (+) input3
 - 12 - (-) input3

Weight : 50g

General tolerance: ±0.5

Specification

Ta=25°C

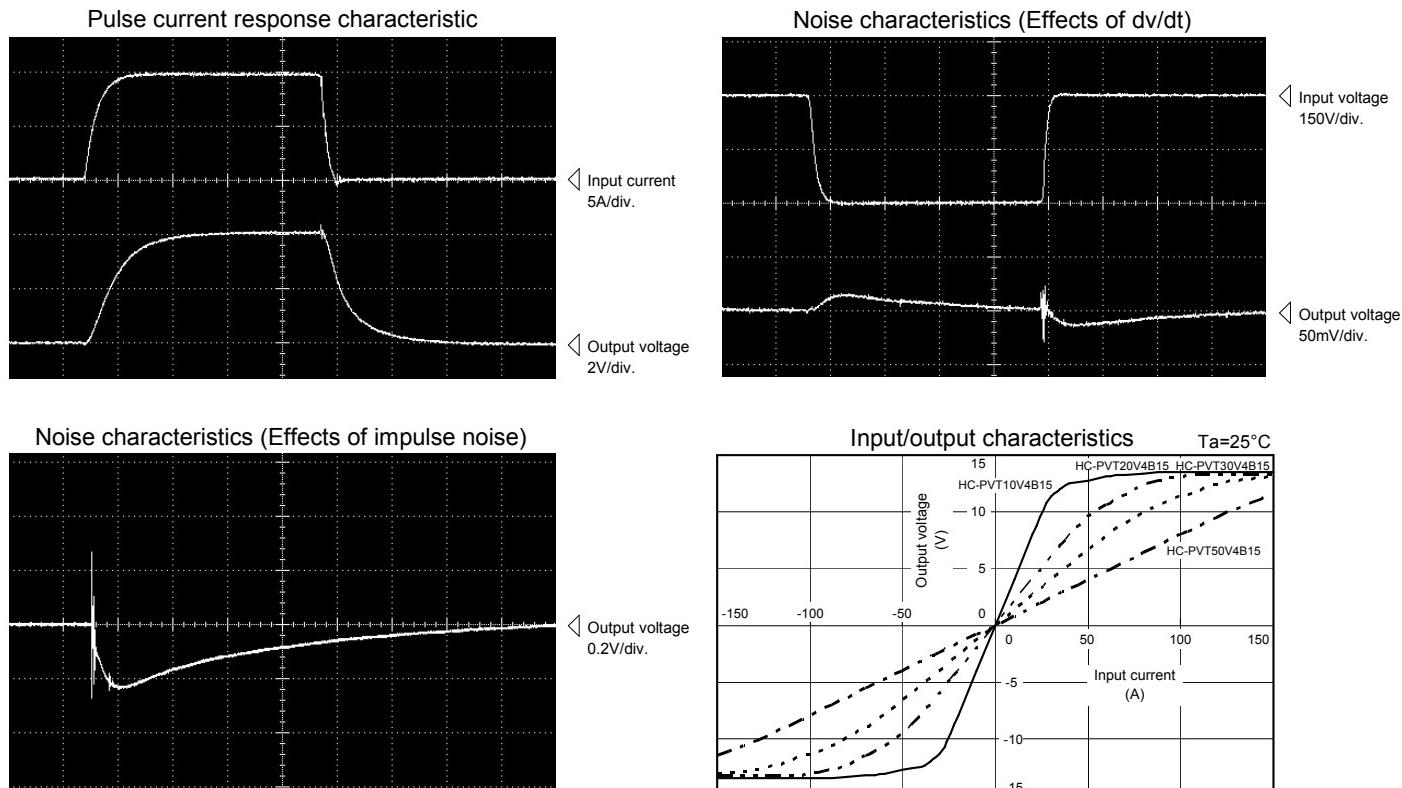
Type	HC-PVT10V4B15	HC-PVT20V4B15	HC-PVT30V4B15	HC-PVT50V4B15
Rated current [If]	±10A	±20A	±30A	±50A
Continuously flowing DC current	±13.8A	±13.8A	±23.3A	±35.4A
Saturation current [Is]	±27.6A	±46A	±69A	±138A
Linearity limits	0~±20A	0~±33.3A	0~±50A	0~±100A
Size of primary winding	Φ1.0	Φ1.0	Φ1.3	Φ1.6
Turns	5	3	2	1
Rated output [Vh]	±4V±2% (RL=10kΩ) (excluding the residual output)			
Residual output [Vo]	Within ±100mV			
Output linearity	Within ±1%			
Response time	Within 10μs (at di/dt=If/μs)			
Response performance	Within 10%			
Hysteresis voltage range	Within 100mV			
Output Temp. Coef.	Within ±0.1%/°C			
Residual output Temp. Coef.	Within ±3mV/°C			
Control power supply	±15V±5%			
Consumption current	Within 60mA			
Operating Temp.	-10°C~+80°C			
Storage Temp.	-15°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

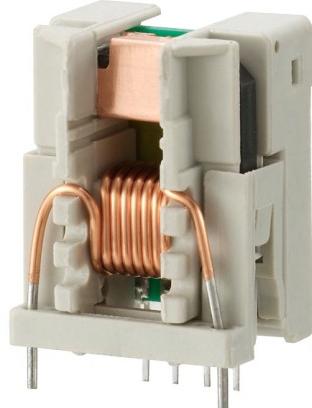
HC-PVT10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PSG



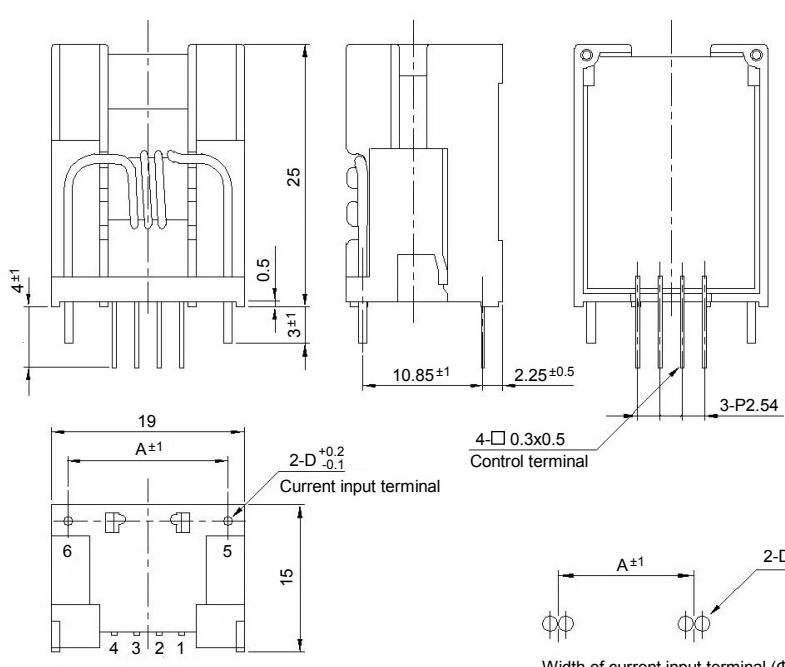
- Rated current 1A ~ 50A
- Superior noise-resistance
- Models available from 1A
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS)

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D	Width A
Φ0.4	Φ1.3	15.7
Φ0.8	Φ0.8	15.7
Φ1.0	Φ1.0	15.7
Φ1.3	Φ1.3	15.7
Φ1.1 x 2	Φ1.1 x 2	14.3
Φ1.4 x 2	Φ1.4 x 2	14.3

Terminal No. 1 - (-) terminal
2 - GND
3 - (+) terminal
4 - Output
5 - (+) input
6 - (-) input

Weight : 8g

General tolerance: ±0.5

Specification

Ta=25°C

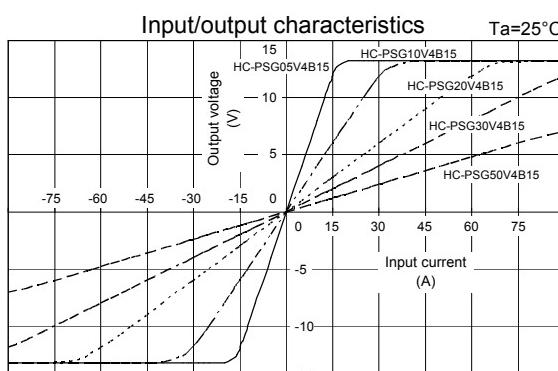
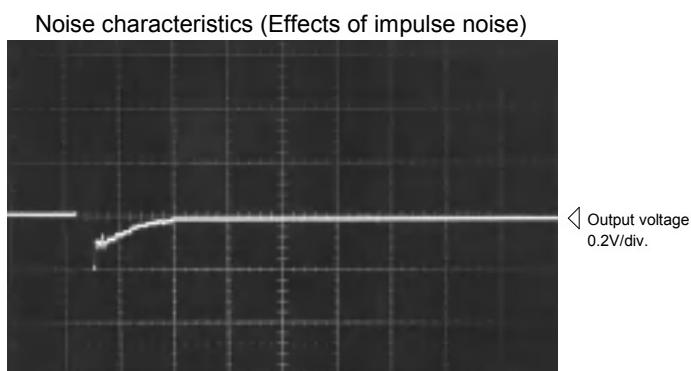
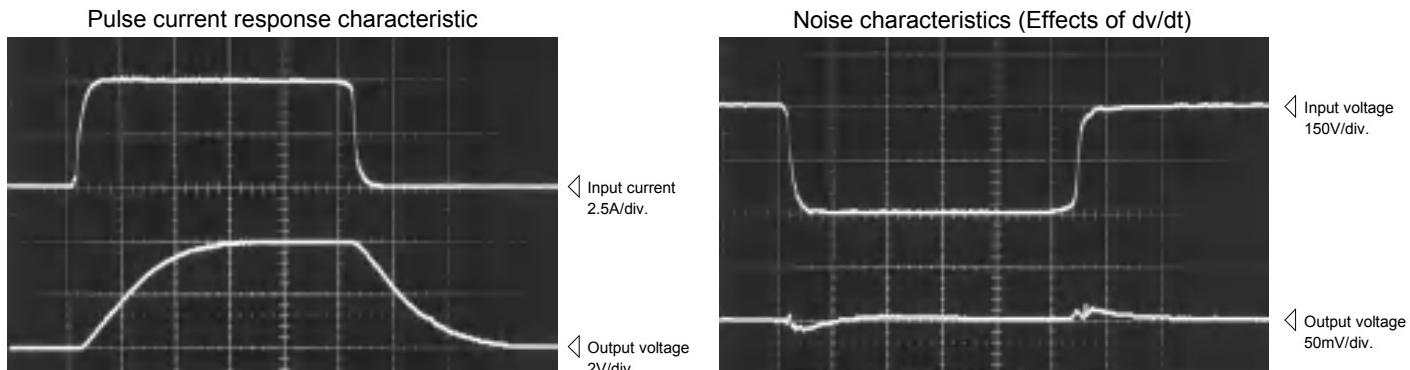
Type	HC-PSG01V4B15	HC-PSG05V4B15	HC-PSG10V4B15	HC-PSG20V4B15	HC-PSG30V4B15	HC-PSG50V4B15
Rated current [If]	±1A	±5A	±10A	±20A	±30A	±50A
Continuously flowing DC current	±2.2A	±8.8A	±13.8A	±23.3A	±33.4A	±54.1A
Saturation current [Is]	±3A	±15A	±30A	±45A	±90A	±90A
Linearity limits	0~±2.5A	0~±12.5A	0~±25A	0~±37.5A	0~±75A	0~±75A
Size of primary winding	Φ0.4	Φ0.8	Φ1	Φ1.3	Φ1.1 x 2	Φ1.4 x 2
Turns	30	6	3	2	1	1
Rated output [Vh]	±4V±2% (RL=10kΩ)					
Residual output [Vo]	Within ±100mV					
Output linearity	Within ±1%					
Response time	Within 10μs (at di/dt=If/μs)					
Response performance	Within 10%					
Hysteresis voltage range	Within 100mV					
Output Temp. Coef.	Within ±0.1%/°C					
Residual output Temp. Coef.	Within ±6mV/°C					
Control power supply	±15V±5%					
Consumption current	Within 30mA					
Operating Temp.	-10°C~+80°C					
Storage Temp.	-15°C~+85°C					
Dielectric withstand voltage	2500V AC 50/60Hz 1minute					
Insulation resistance	Not less than 500MΩ 500V DC					

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

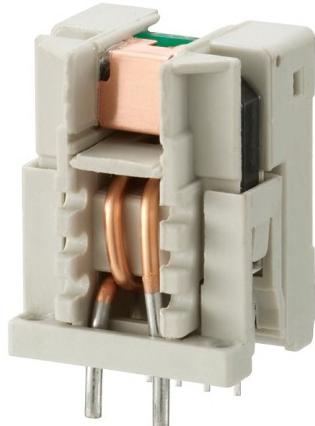
HC-PSG05V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PSE



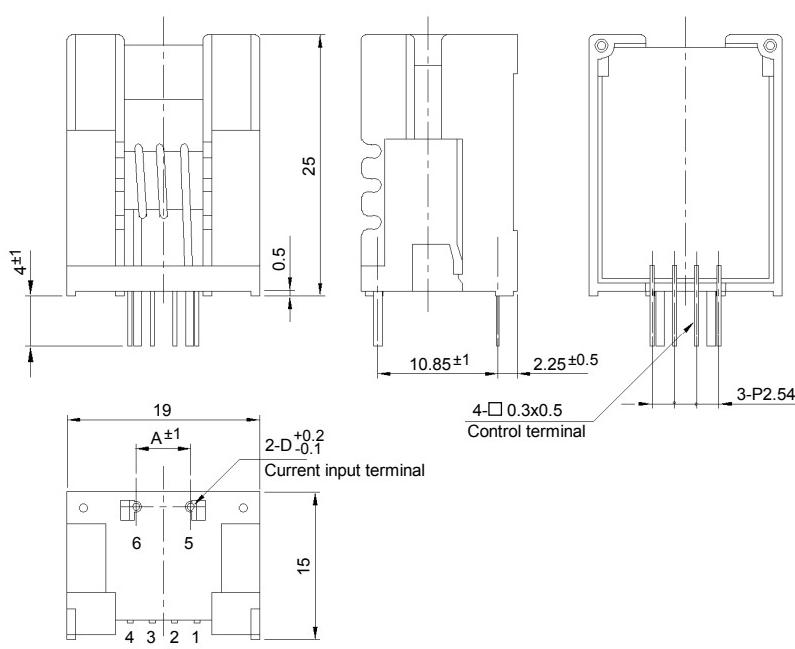
- Rated current 5A ~ 50A
- Well isolated for European Standards
- Superior noise-resistance
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS)

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D	Width A
Φ0.8	Φ0.8	5.7
Φ1.0	Φ1.0	5.7
Φ1.3	Φ1.3	5.7
Φ1.6	Φ1.6	5.2

Terminal No. 1 - (-) terminal
 2 - GND
 3 - (+) terminal
 4 - Output
 5 - (+) input
 6 - (-) input

Weight : 8g

General tolerance: ±0.5

Specification

Ta=25°C

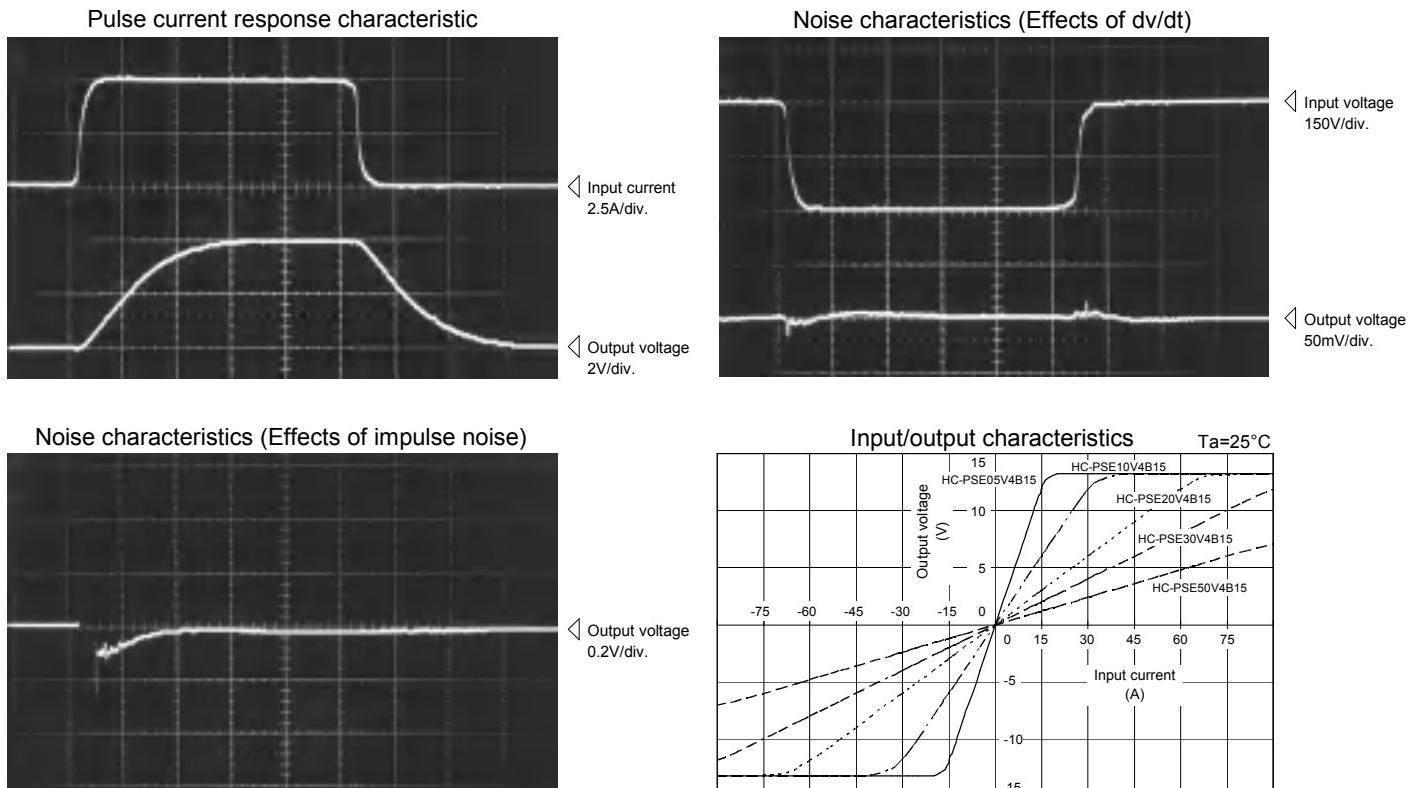
Type	HC-PSE05V4B15	HC-PSE10V4B15	HC-PSE20V4B15	HC-PSE30V4B15	HC-PSE50V4B15
Rated current [If]	±5A	±10A	±20A	±30A	±50A
Continuously flowing DC current	±8.8A	±13.8A	±23.3A	±23.3A	±35.4A
Saturation current [Is]	±15A	±30A	±45A	±90A	±90A
Linearity limits	0~±12.5A	0~±25A	0~±37.5A	0~±75A	0~±75A
Size of primary winding	Φ0.8	Φ1	Φ1.3	Φ1.3	Φ1.6
Turns	6	3	2	1	1
Rated output [Vh]	±4V±2% (RL=10kΩ)				
Residual output [Vo]	Within ±100mV				
Output linearity	Within ±1%				
Response time	Within 10μs (at di/dt=If/μs)				
Response performance	Within 10%				
Hysteresis voltage range	Within 100mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±6mV/°C				
Control power supply	±15V±5%				
Consumption current	Within 30mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

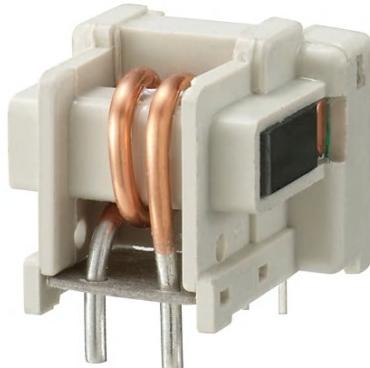
HC-PSE05V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PD



- Rated current 5A ~ 50A

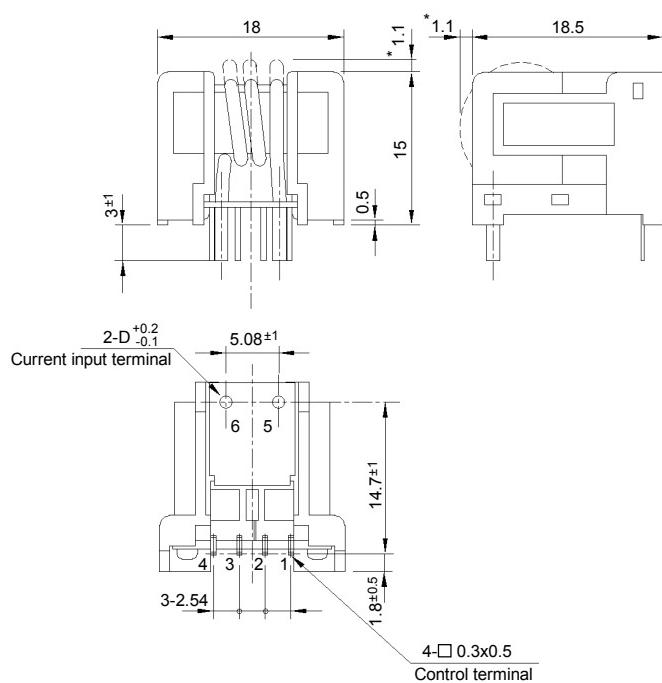
- Reduced height compact design

Applications

Inverters, Servo drivers, NC machine tools

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.8	Φ0.8
Φ1.3	Φ1.3
Φ1.6	Φ1.6

Note) The dimensions marked with * are protruded areas of the primary winding

Terminal No. 1 - (-) terminal
2 - GND
3 - (+) terminal
4 - Output
5 - (+) input
6 - (-) input

Weight : 6g

General tolerance: ±0.5

Specification

Ta=25°C

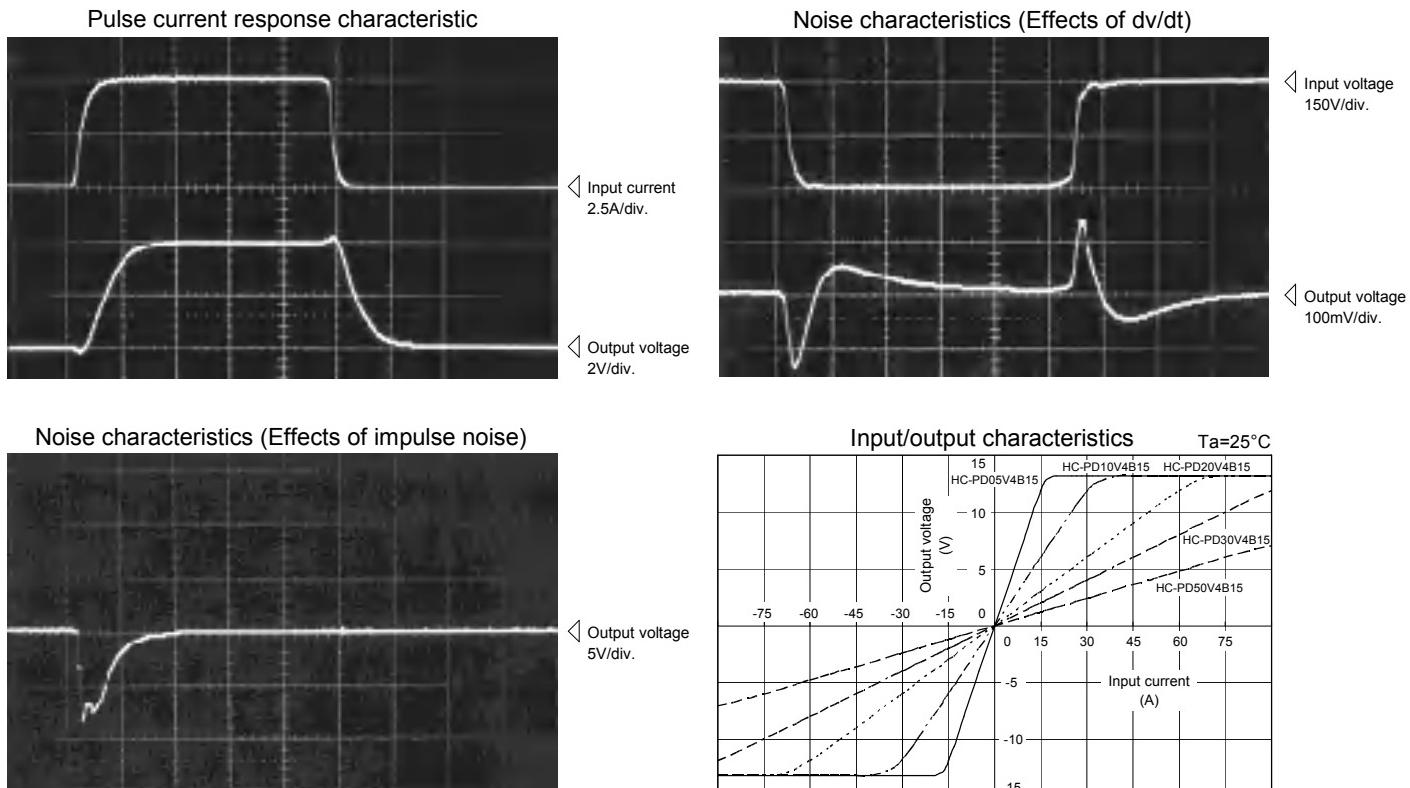
Type	HC-PD05V4B15	HC-PD10V4B15	HC-PD20V4B15	HC-PD30V4B15	HC-PD50V4B15
Rated current [If]	±5A	±10A	±20A	±30A	±50A
Continuously flowing DC current	±8.8A	±23.3A	±23.3A	±35.4A	±35.4A
Saturation current [Is]	±15A	±30A	±45A	±90A	±90A
Linearity limits	0~±12.5A	0~±25A	0~±37.5A	0~±75A	0~±75A
Size of primary winding	Φ0.8	Φ1.3	Φ1.3	Φ1.6	Φ1.6
Turns	6	3	2	1	1
Rated output [Vh]	±4V±2% (RL=10kΩ)				
Residual output [Vo]	Within ±100mV				
Output linearity	Within ±1%				
Response time	Within 10μs (at di/dt=If/μs)				
Response performance	Within 10%				
Hysteresis voltage range	Within 100mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±6mV/°C				
Control power supply	±15V±5%				
Consumption current	Within 30mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

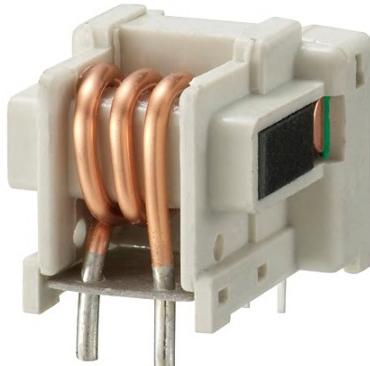
HC-PD05V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PDN



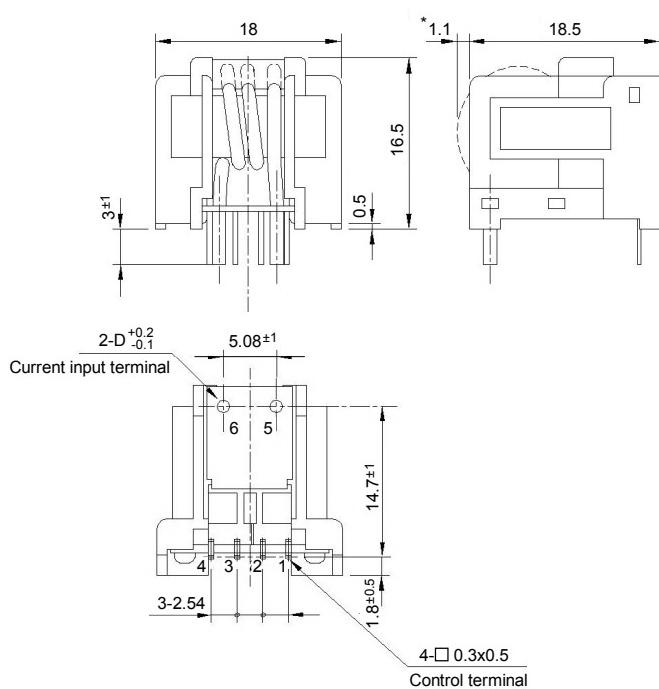
- Rated current 5A ~ 50A
- Well isolated for European Standards
- Superior noise-resistance
- Reduced height compact design

Applications

Inverters, Servo drivers, NC machine tools

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.8	Φ0.8
Φ1.3	Φ1.3
Φ1.6	Φ1.6

Note) The dimensions marked with * are protruded areas of the primary winding

Terminal No. 1 - (-) terminal
 2 - GND
 3 - (+) terminal
 4 - Output
 5 - (+) input
 6 - (-) input

Weight : 6g

General tolerance: ±0.5

Specification

Ta=25°C

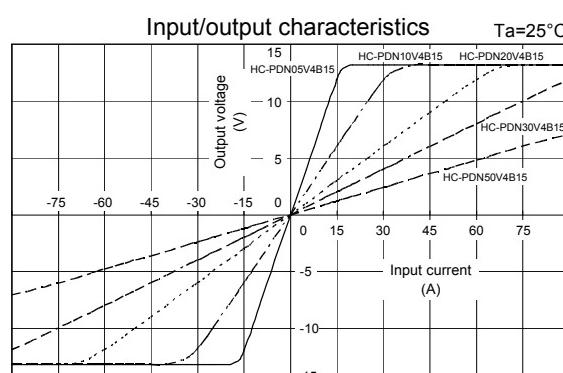
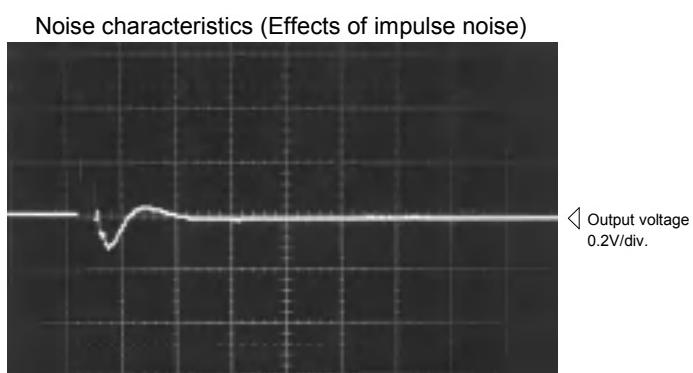
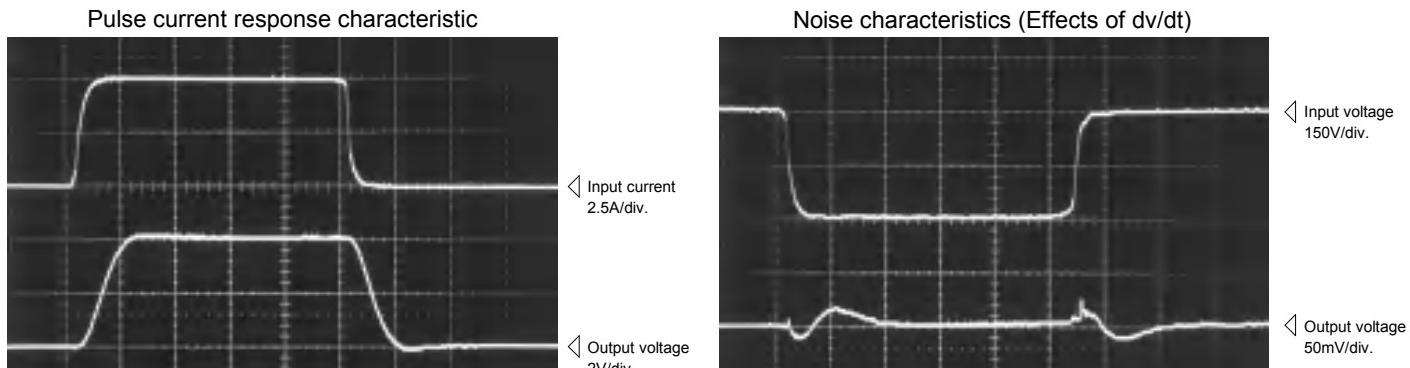
Type	HC-PDN05V4B15	HC-PDN10V4B15	HC-PDN20V4B15	HC-PDN30V4B15	HC-PDN50V4B15
Rated current [If]	±5A	±10A	±20A	±30A	±50A
Continuously flowing DC current	±8.8A	±23.3A	±23.3A	±35.4A	±35.4A
Saturation current [Is]	±15A	±30A	±45A	±90A	±90A
Linearity limits	0~±12.5A	0~±25A	0~±37.5A	0~±75A	0~±75A
Size of primary winding	Φ0.8	Φ1.3	Φ1.3	Φ1.6	Φ1.6
Turns	6	3	2	1	1
Rated output [Vh]	±4V±2% (RL=10kΩ)				
Residual output [Vo]	Within ±100mV				
Output linearity	Within ±1%				
Response time	Within 10μs (at di/dt=If/μs)				
Response performance	Within 10%				
Hysteresis voltage range	Within 100mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±6mV/°C				
Control power supply	±15V±5%				
Consumption current	Within 30mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

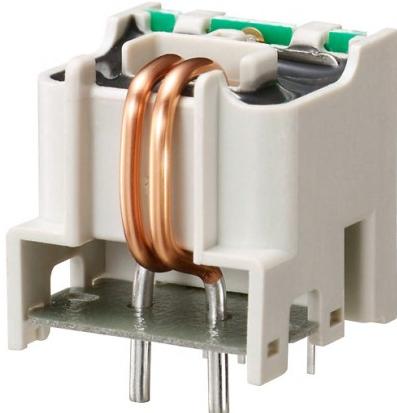
HC-PDN05V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PDG



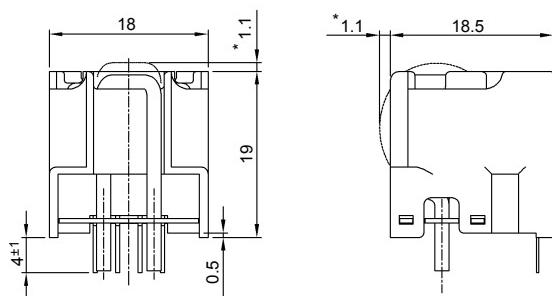
- Rated current 5A ~ 50A
- Superior noise-resistance
- Superior saturation characteristics
- Reduced height compact design
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

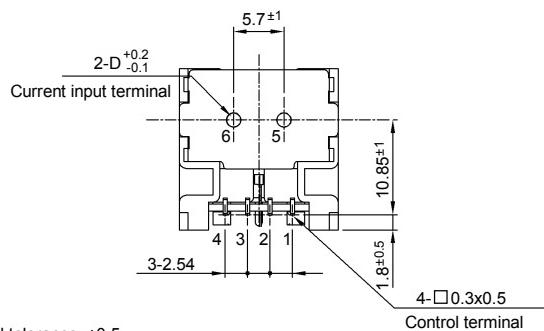
(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.8	Φ0.8
Φ1.0	Φ1.0
Φ1.1	Φ1.1
Φ1.3	Φ1.3
Φ1.6	Φ1.6

Note) Marking * mean maximum dimensions
of primary winding protuberant.



Terminal No.
 1 - (-) terminal
 2 - GND
 3 - (+) terminal
 4 - Output
 5 - (+) input
 6 - (-) input

Weight : 9g

General tolerance: ±0.5

Specification

Ta=25°C

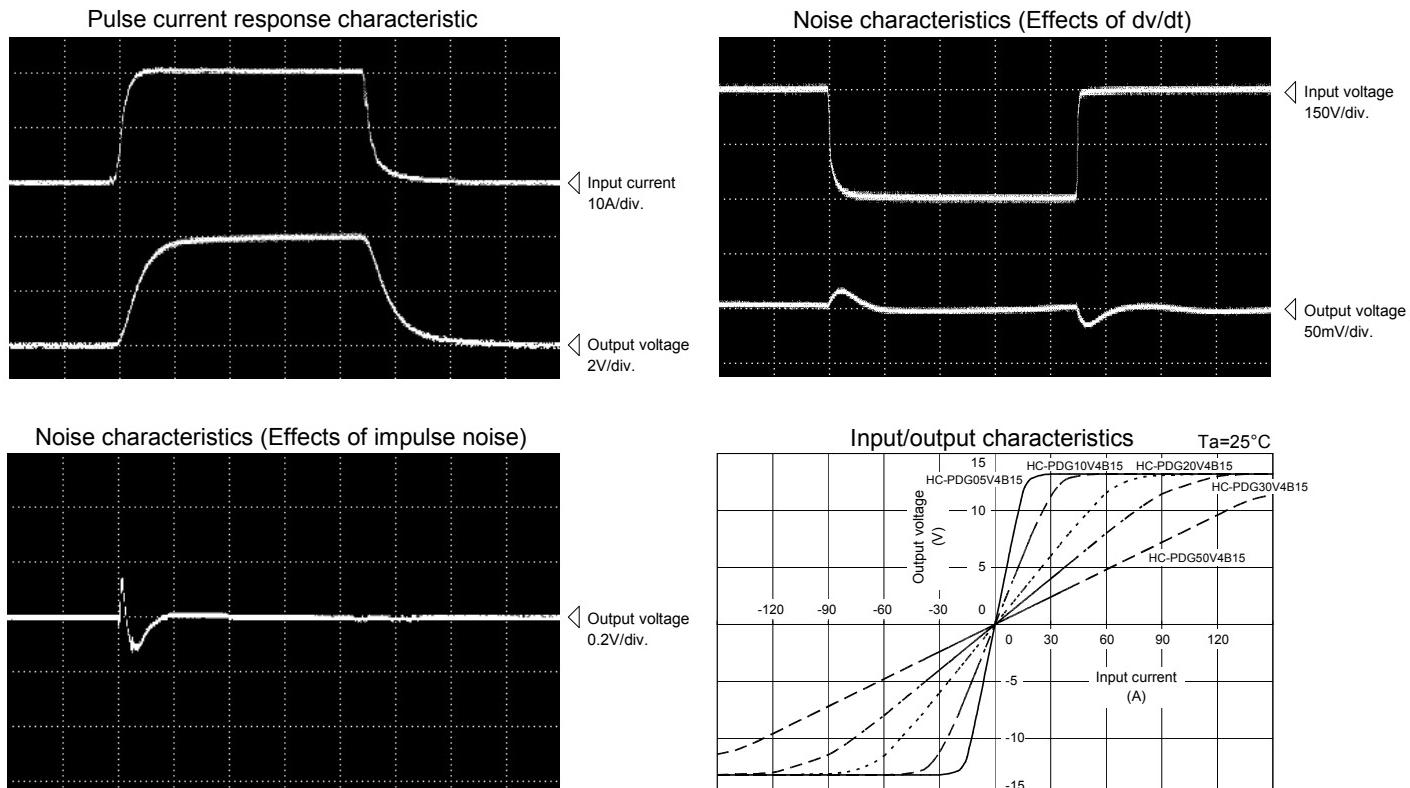
Type	HC-PDG05V4B15	HC-PDG10V4B15	HC-PDG20V4B15	HC-PDG30V4B15	HC-PDG50V4B15
Rated current [If]	±5A	±10A	±20A	±30A	±50A
Continuously flowing DC current	±8.8A	±13.8A	±23.3A	±23.3A	±35.4A
Saturation current [Is]	±15A	±25A	±50A	±75A	±150A
Linearity limits	0~±13.5A	0~±22.5A	0~±45A	0~±67.5A	0~±135A
Size of primary winding	Φ0.8	Φ1.0	Φ1.3	Φ1.3	Φ1.6
Turns	10	6	3	2	1
Rated output [Vh]	±4V±1.5% (RL=10kΩ)				
Residual output [Vo]	Within ±50mV				
Output linearity	Within ±1%				
Response time	Within 10μs (at di/dt=If/μs)				
Response performance	Within 10%				
Hysteresis voltage range	Within 60mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±2mV/°C				
Control power supply	±15V±5%				
Consumption current	Within 20mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

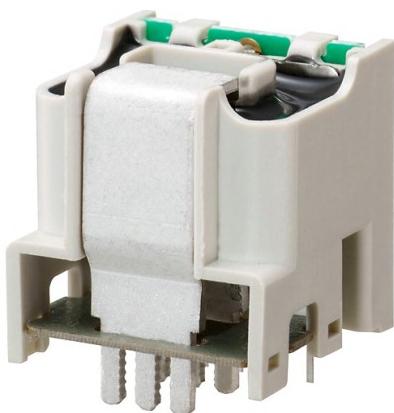
HC-PDG20V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PDK



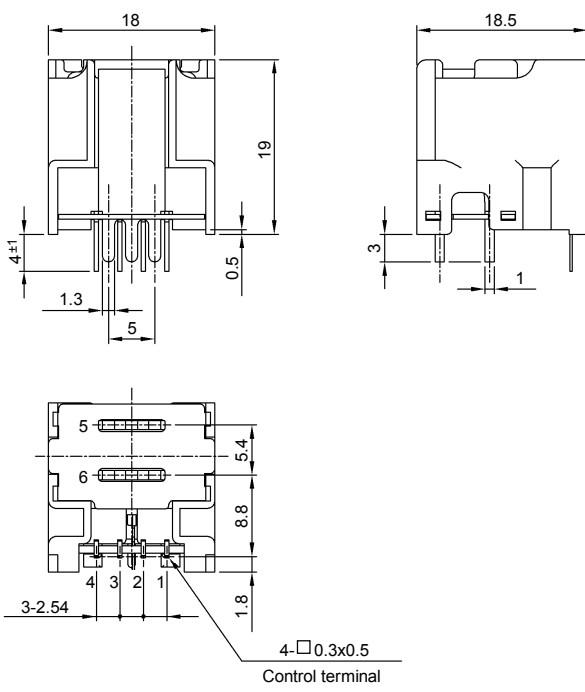
- Rated current 50A ~ 100A
- Superior noise-resistance
- Superior saturation characteristics
- Reduced height compact design
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

Dimensions

(mm)



Terminal No.

1	- (-) terminal
2	- GND
3	- (+) terminal
4	- Output
5	- (+) input
6	- (-) input

Weight : 10g

General tolerance: ±0.5

Specification

Ta=25°C

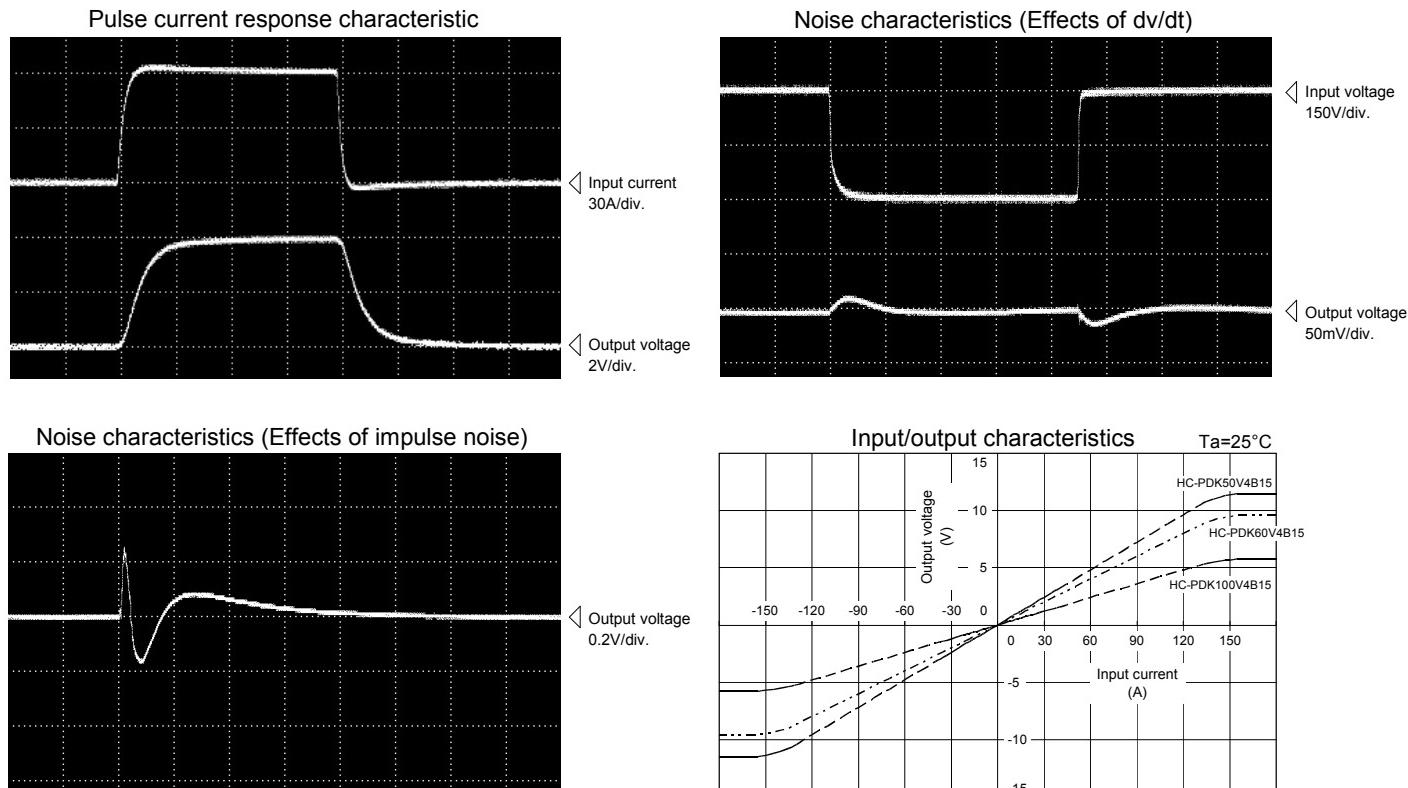
Type	HC-PDK50V4B15	HC-PDK60V4B15	HC-PDK100V4B15
Rated current [If]	±50A	±60A	±100A
Continuously flowing DC current	±100A		
Saturation current [Is]	±150A		
Linearity limits	0~±135A		
Size of primary busbar	Busbar 1 x 7.8		
Turns	1		
Rated output [Vh]	±4V±1.5% (RL=10kΩ)		
Residual output [Vo]	Within ±50mV		
Output linearity	Within ±1%		
Response time	Within 10μs (at di/dt=If/μs)		
Response performance	Within 10%		
Hysteresis voltage range	Within 60mV		
Output Temp. Coef.	Within ±0.1%/°C		
Residual output Temp. Coef.	Within ±2mV/°C		
Control power supply	±15V±5%		
Consumption current	Within 20mA		
Operating Temp.	-10°C~+80°C		
Storage Temp.	-15°C~+85°C		
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-PDK60V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PL



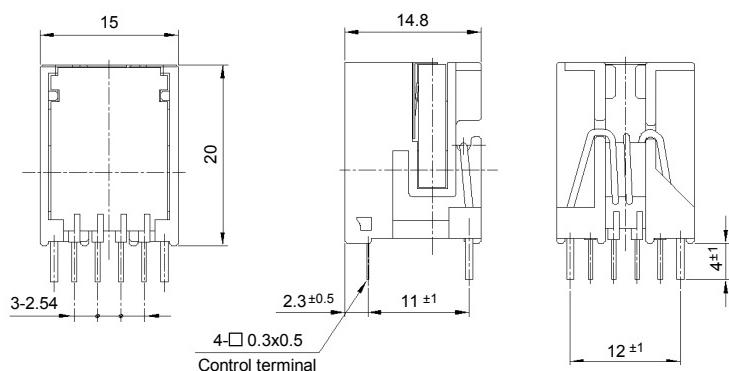
- Rated current 5A ~ 30A
- Requires little space on the PCB
- Single-power supplies also available

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)

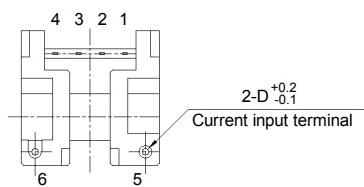


Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.6	Φ0.6
Φ0.8	Φ0.8
Φ1.0	Φ1.0
Φ1.3	Φ1.3

Terminal No. 1 - (+) terminal
 2 - (-) terminal
 3 - Output
 4 - GND
 5 - (+) input
 6 - (-) input

Weight : 6g



General tolerance: ±0.5

Specification

Ta=25°C

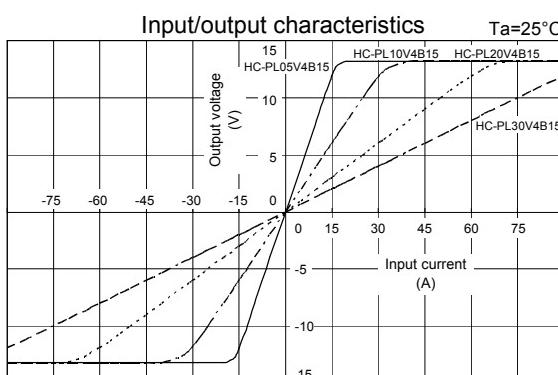
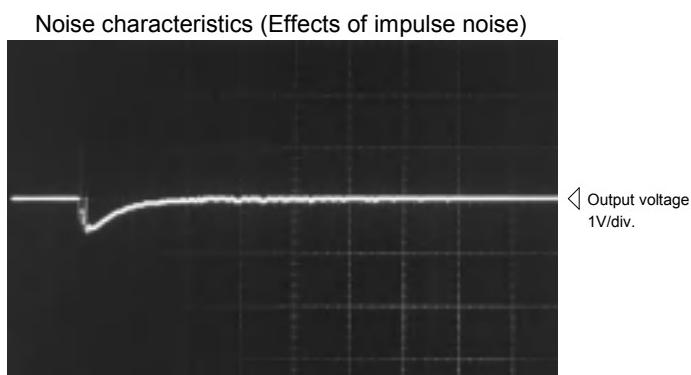
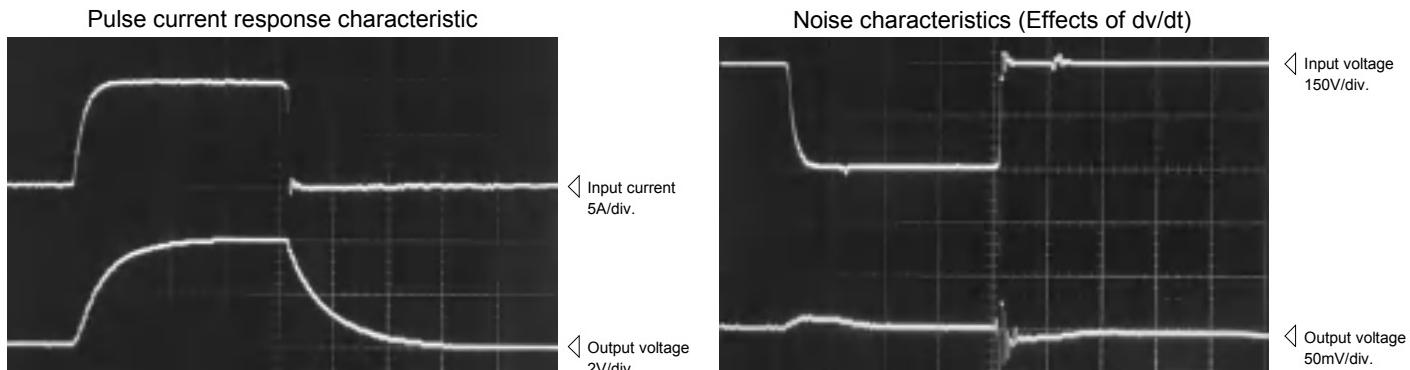
Type	HC-PL05V4B15	HC-PL10V4B15	HC-PL20V4B15	HC-PL30V4B15
Rated current [If]	±5A	±10A	±20A	±30A
Continuously flowing DC current	±8.8A	±8.8A	±13.8A	±23.3A
Saturation current [Is]	±12.5A	±25A	±37.5A	±75A
Linearity limits	0~±10A	0~±20A	0~±30A	0~±60A
Size of primary winding	Φ0.8	Φ0.8	Φ1.0	Φ1.3
Turns	6	3	2	1
Rated output [Vh]	±4V±2% (RL=10kΩ)			
Residual output [Vo]	Within ±100mV			
Output linearity	Within ±1%			
Response time	Within 10μs (at di/dt=If/μs)			
Response performance	Within 10%			
Hysteresis voltage range	Within 100mV			
Output Temp. Coef.	Within ±0.1%/°C			
Residual output Temp. Coef.	Within ±2mV/°C			
Control power supply	±15V±5%			
Consumption current	Within 30mA			
Operating Temp.	-10°C~+80°C			
Storage Temp.	-15°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

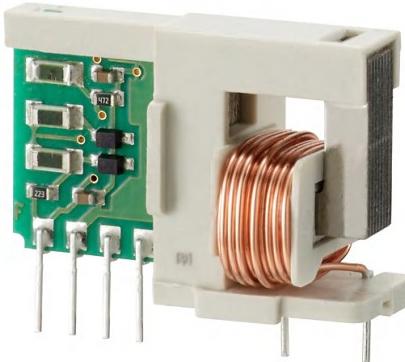
HC-PL10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PFG



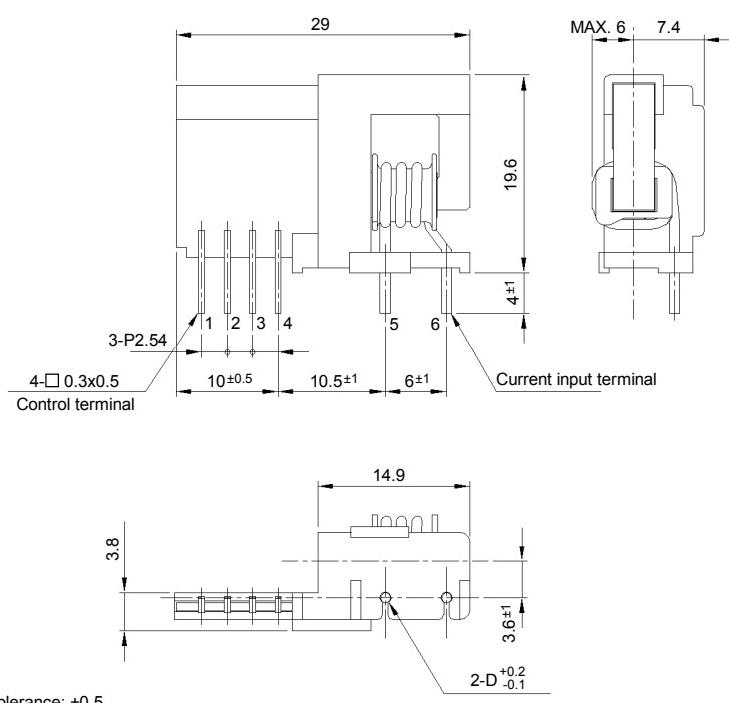
- Rated current 3A ~ 30A
- Well isolated for European Standards
- Superior noise-resistance
- Small mounting surface (SIP type)
- Single-power supplies also available

Applications

Inverters, Servo drivers, NC machine tools

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.5	Φ0.5
Φ0.6	Φ0.6
Φ0.8	Φ0.8
Φ1.0	Φ1.0
Φ1.1	Φ1.1
Φ1.3	Φ1.3

Terminal No. 1 - (-) terminal
 2 - GND
 3 - (+) terminal
 4 - Output
 5 - (-) input
 6 - (+) input

Weight : 6g

Specification

Ta=25°C

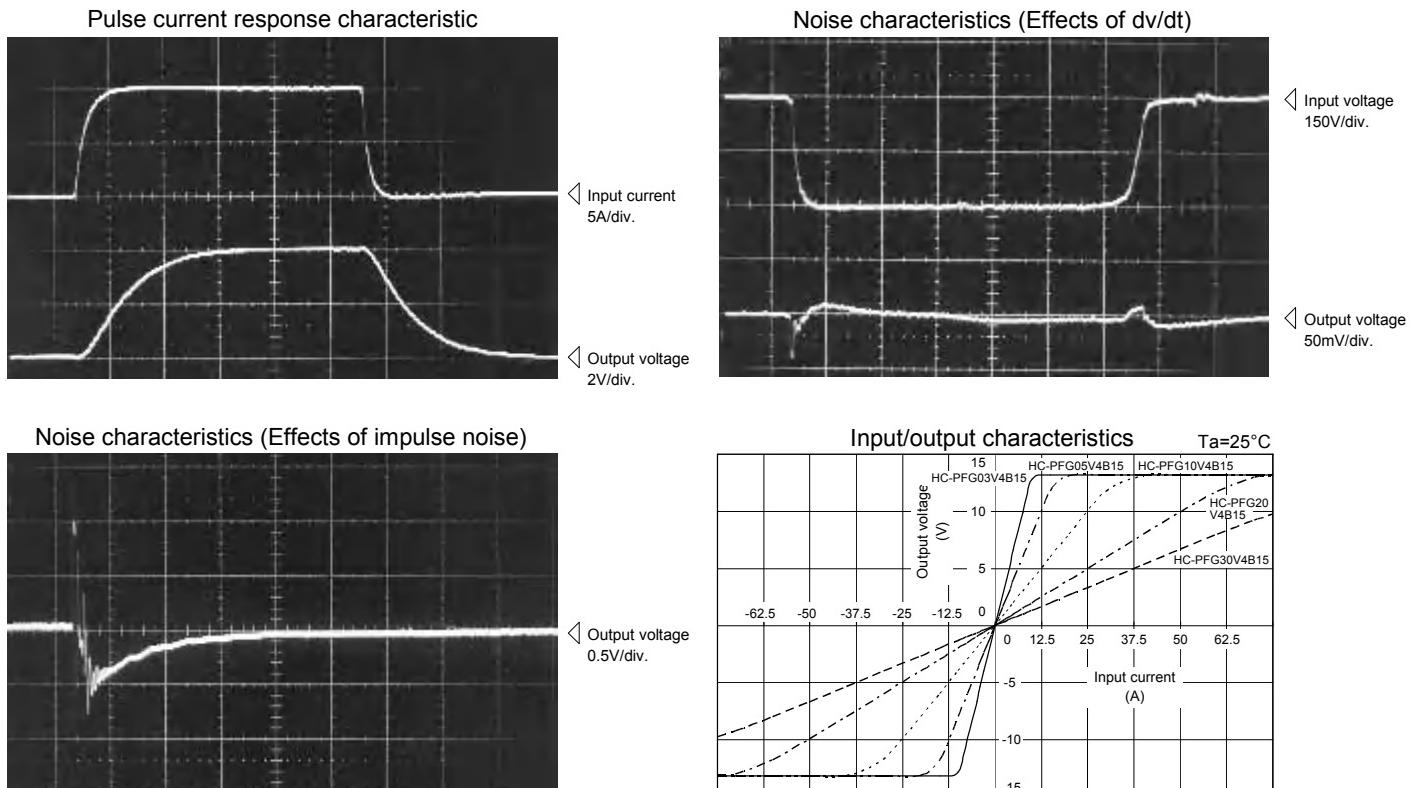
Type	HC-PFG03V4B15	HC-PFG05V4B15	HC-PFG10V4B15	HC-PFG20V4B15	HC-PFG30V4B15
Rated current [If]	±3A	±5A	±10A	±20A	±30A
Continuously flowing DC current	±5A	±8.8A	±8.8A	±23.3A	±23.3A
Saturation current [Is]	±9A	±15A	±30A	±60A	±75A
Linearity limits	0~±7.5A	0~±12.5A	0~±25A	0~±60A	0~±62.5A
Size of primary winding	Φ0.6	Φ0.8	Φ0.8	Φ1.3	Φ1.3
Turns	16	10	5	2	2
Rated output [Vh]	±4V±2% (RL=10kΩ)				
Residual output [Vo]	Within ±100mV				
Output linearity	Within ±1%				
Response time	Within 10μs (at di/dt=If/μs)				
Response performance	Within 10%				
Hysteresis voltage range	Within 100mV				
Output Temp. Coef.	Within ±0.1%/°C				
Residual output Temp. Coef.	Within ±3mV/°C				
Control power supply	±15V±5%				
Consumption current	Within 30mA				
Operating Temp.	-10°C~+80°C				
Storage Temp.	-15°C~+85°C				
Dielectric withstand voltage	2500V AC 50/60Hz 1minute				
Insulation resistance	Not less than 500MΩ 500V DC				

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

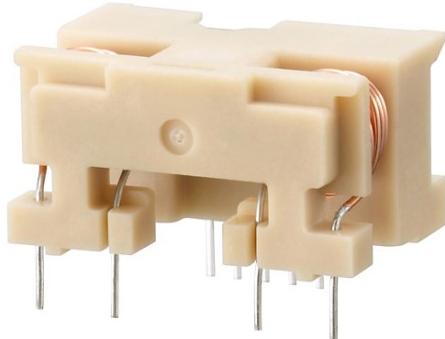
HC-PFG10V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PRC



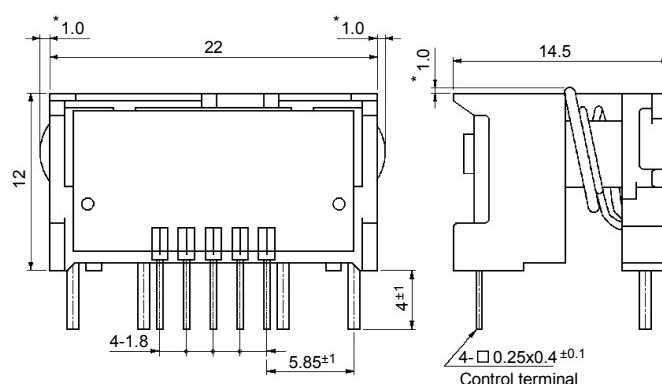
- Rated current 3A ~ 20A
- Well isolated for European Standards
- Compact design: height has been kept down to 12.0 mm
- Single-power supplies also available
- Two circuits can be measured at the same time

Applications

Inverters, Servo drivers, NC machine tools

Dimensions

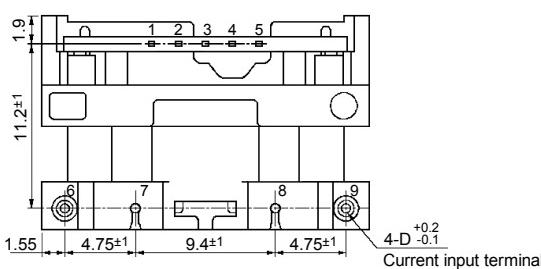
(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.45	Φ0.45
Φ0.6	Φ0.6
Φ0.9	Φ0.9

Note) The dimensions marked with * are protruded areas of the primary winding



Terminal No. 1 - (+) terminal
 2 - (-) terminal
 3 - Output1
 4 - Output2
 5 - GND
 6 - (+) input
 7 - (-) input
 8 - (+) input
 9 - (-) input

Weight : 5g

General tolerance: ±0.5

Specification

Ta=25°C

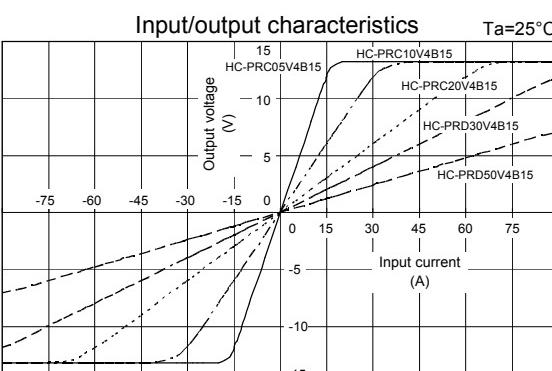
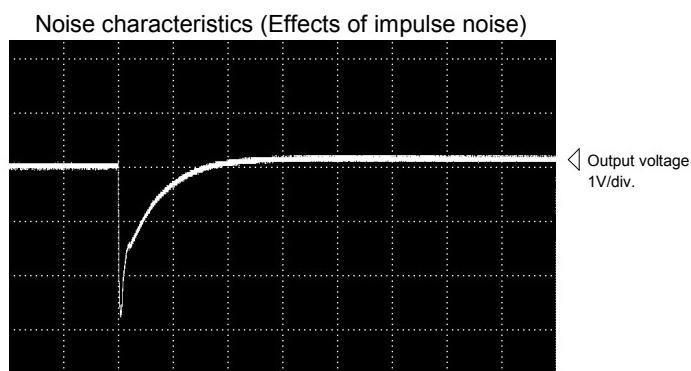
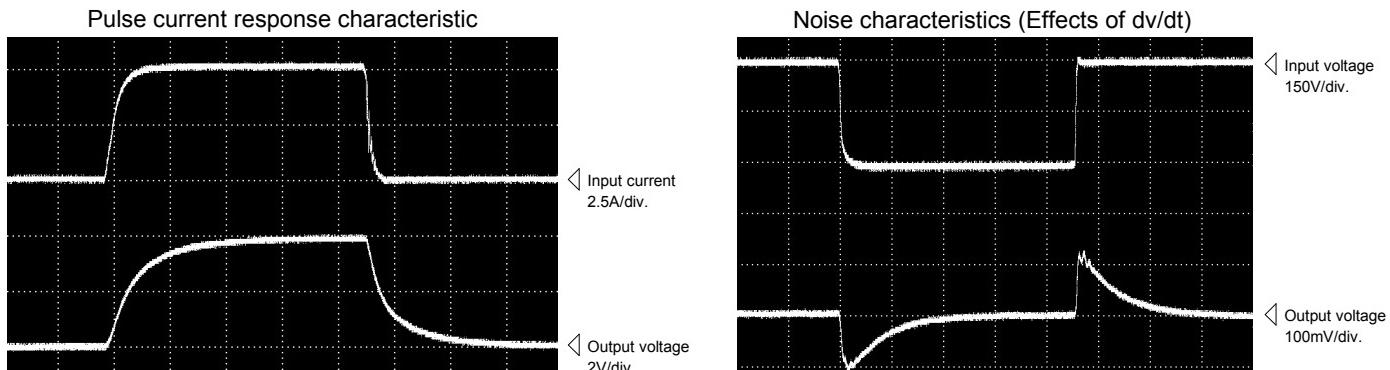
Type	HC-PRC03V4B15	HC-PRC05V4B15	HC-PRC10V4B15	HC-PRC20V4B15
Rated current [If]	±3A	±5A	±10A	±20A
Continuously flowing DC current	±3.5A	±3.5A	±8.8A	±8.8A
Saturation current [Is]	±9A	±15A	±30A	±45A
Linearity limits	0~±7.5A	0~±12.5A	0~±25A	0~±37.5A
Size of primary winding	Φ0.45	Φ0.45	Φ0.9	Φ0.9
Turns	10	6	3	2
Rated output [Vh]	+If	V0+4V±1.5% (RL=10kΩ)		
	-If	V0-4V±1.5% (RL=10kΩ)		
Residual output [Vo]		Within ±100mV		
Output linearity		Within ±1%		
Response time		Within 10μs (at di/dt=If/μs)		
Response performance		Within 10%		
Hysteresis voltage range		Within 120mV		
Output Temp. Coef.		Within ±0.1%/°C		
Residual output Temp. Coef.		Within ±3mV/°C		
Control power supply		±15V±5%		
Consumption current		Within 40mA		
Operating Temp.		-10°C~+80°C		
Storage Temp.		-15°C~+85°C		
Dielectric withstand voltage		2500V AC 50/60Hz 1minute		
Insulation resistance		Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

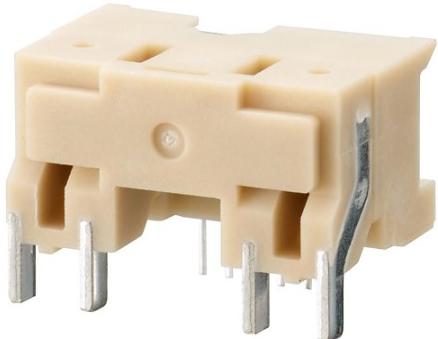
HC-PRC05V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HC-PRD



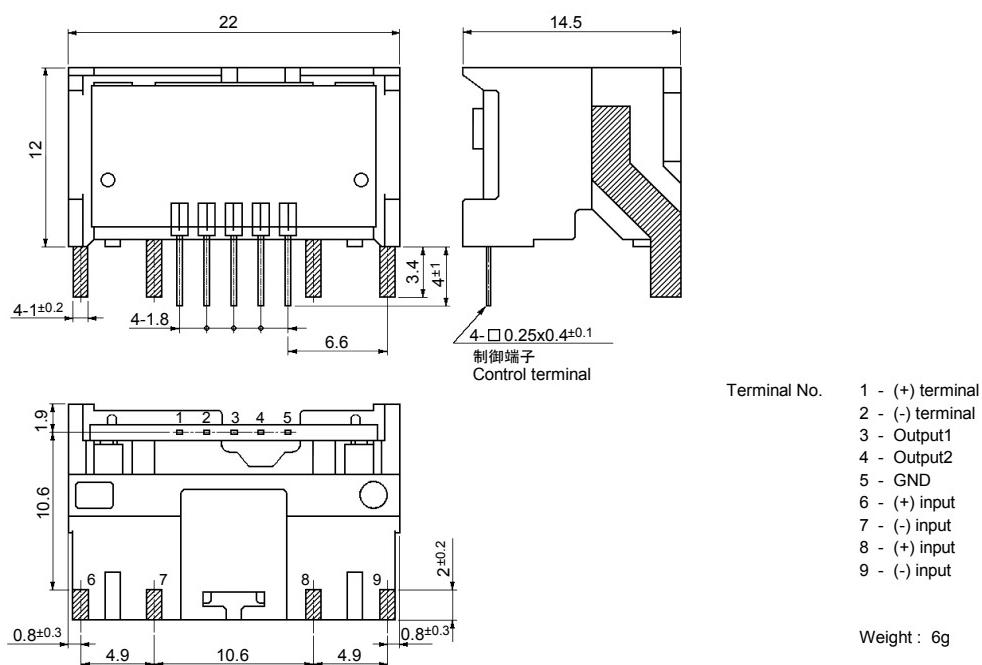
- Rated current 25A ~ 50A
- Well isolated for European Standards
- Compact design: height has been kept down to 12.0 mm
- Single-power supplies also available
- Two circuits can be measured at the same time

Applications

Inverters, Servo drivers, NC machine tools

Dimensions

(mm)



General tolerance: ±0.5

Specification

Ta=25°C

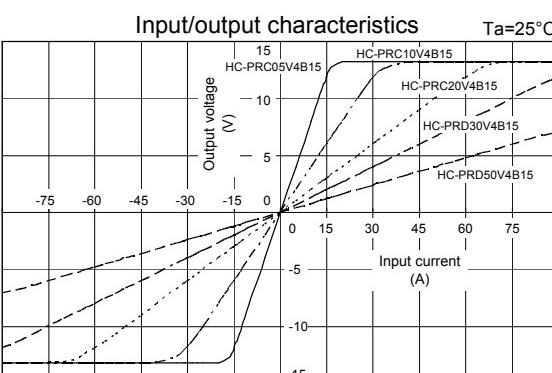
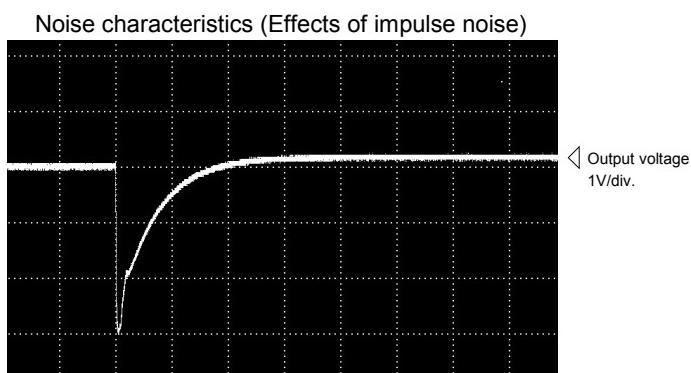
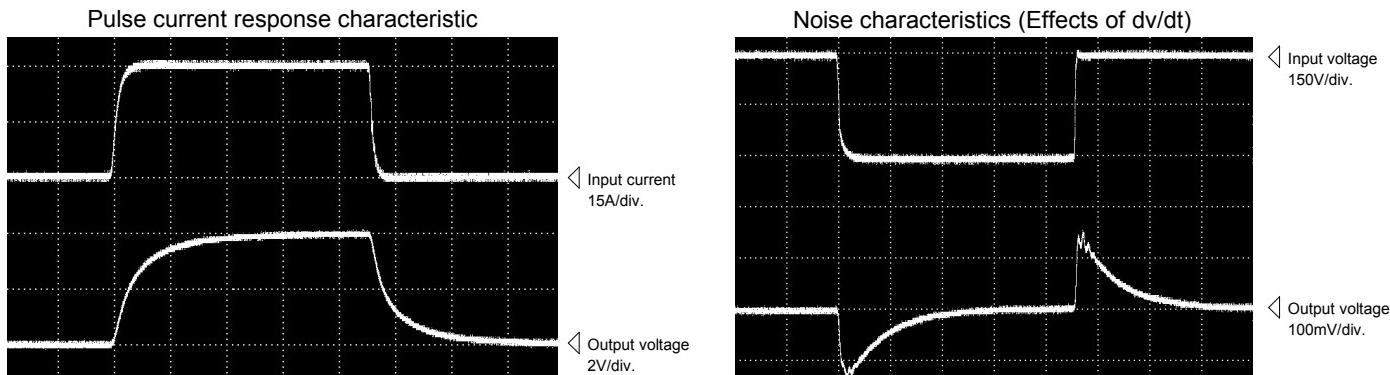
Type	HC-PRD25V4B15	HC-PRD30V4B15	HC-PRD40V4B15	HC-PRD50V4B15
Rated current [If]	±25A	±30A	±40A	±50A
Continuously flowing DC current	±35A	±35A	±35A	±35A
Saturation current [Is]	±75A	±90A	±90A	±90A
Linearity limits	0~±75A	0~±75A	0~±75A	0~±75A
Size of primary busbar	□ 1 x 2	□ 1 x 2	□ 1 x 2	□ 1 x 2
Turns	1	1	1	1
Rated output [Vh]	+If	V0+4V±1.5% (RL=10kΩ)		
	-If	V0-4V±1.5% (RL=10kΩ)		
Residual output [Vo]		Within ±100mV		
Output linearity		Within ±1%		
Response time		Within 10μs (at di/dt=If/μs)		
Response performance		Within 10%		
Hysteresis voltage range		Within 120mV		
Output Temp. Coef.		Within ±0.1%/°C		
Residual output Temp. Coef.		Within ±3mV/°C		
Control power supply		±15V±5%		
Consumption current		Within 40mA		
Operating Temp.		-10°C~+80°C		
Storage Temp.		-15°C~+85°C		
Dielectric withstand voltage		2500V AC 50/60Hz 1minute		
Insulation resistance		Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Characteristics chart

HC-PRD30V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-PHA



- Rated current 5A ~ 30A

- Realized high precision and compact size

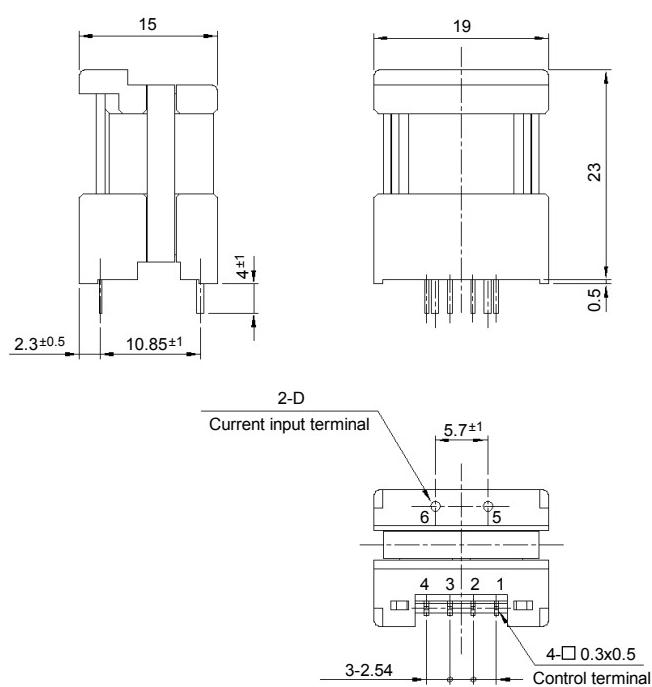
- Superior in response, linearity and temperature characteristics

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.8	Φ0.8
Φ1.0	Φ1.0
Φ1.3	Φ1.3
□ 1.2 x 2	□ 1.2 x 2

Terminal No.

1	- (-) terminal
2	GND
3	(+) terminal
4	Output
5	(+) input
6	(-) input

Weight : 12g

Specification

Ta=25°C

Type	Voltage output type			
HS-PHA05V4B15	HS-PHA10V4B15	HS-PHA20V4B15	HS-PHA30V4B15	
Rated current [If]	±5A	±10A	±20A	±30A
Continuously flowing DC current	±3.6A	±7.2A	±14.4A	±21.6A
Saturation current [Is]	±12.5A	±25A	±50A	±75A
Linearity limits	0~±10A	0~±20A	0~±40A	0~±60A
Size of primary winding	Φ0.8	Φ1.0	Φ1.3	Φ1.3
Turns	6	3	1	1
Rated output [Vh]	±4V±1.5% (RL=10kΩ)			
Residual output [Vo]	Within ±30mV			
Output linearity	Within ±0.5%			
Response time	Within 3μs (at di/dt=If/μs)			
Response performance	Within 20%			
Hysteresis voltage range	Within 50mV			
Output Temp. Coef.	Within ±0.04%/°C			
Residual output Temp. Coef.	Within ±1mV/°C			
Control power supply	±15V±5%			
Consumption current	20mA+(Input current x N)/1270			
Operating Temp.	-10°C~+80°C			
Storage Temp.	-15°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

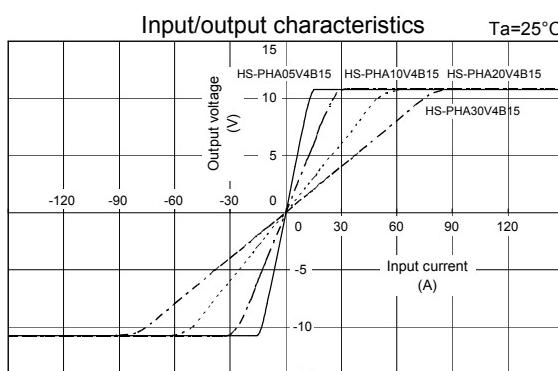
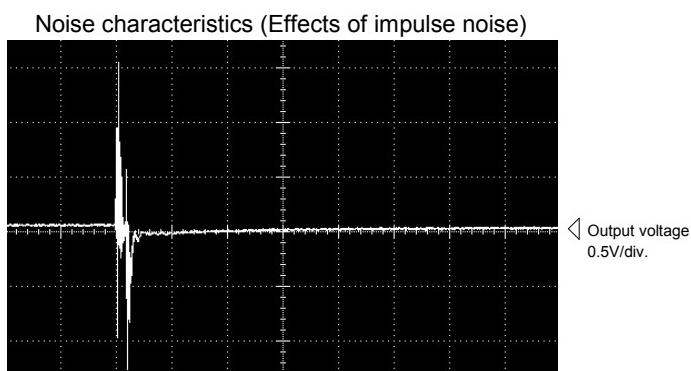
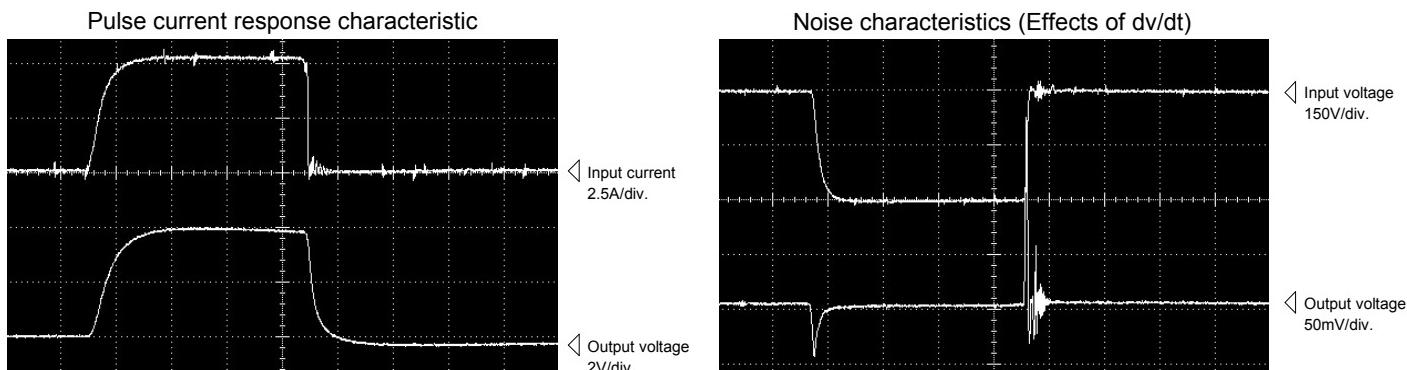
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-PHA05V4B15 (RL=10kΩ)

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-PHB



- Rated current 35A ~ 50A

- Realized high precision and compact size

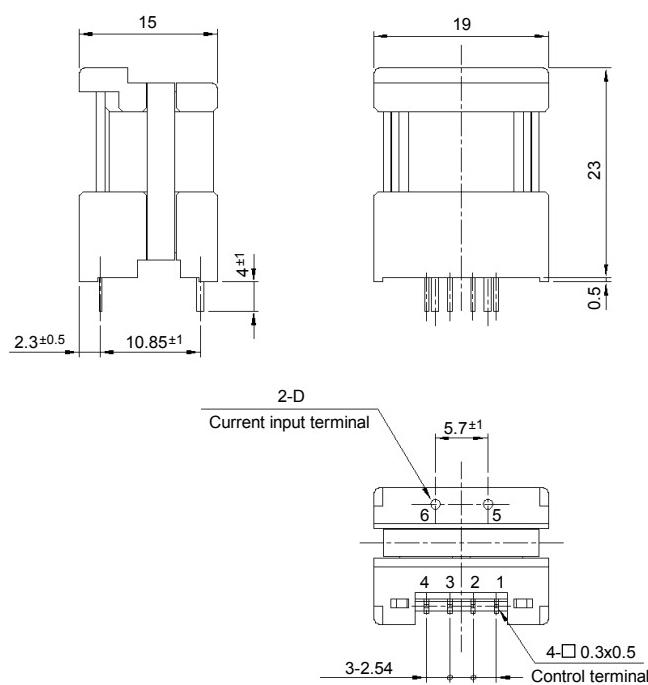
- Superior in response, linearity and temperature characteristics

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Dimensions of Current Input Terminals

Size of primary winding	Width D
Φ0.8	Φ0.8
Φ1.0	Φ1.0
Φ1.3	Φ1.3
□ 1.2 x 2	□ 1.2 x 2

Terminal No.

1	- (-) terminal
2	GND
3	(+) terminal
4	Output
5	(+) input
6	(-) input

Weight : 12g

Specification

Ta=25°C

Type	Voltage output type		
HS-PHB35V4B15	HS-PHB40V4B15	HS-PHB50V4B15	
Rated current [If]	±35A	±40A	±50A
Continuously flowing DC current	±25.2A	±28.8A	±36A
Saturation current [Is]	±87.5A	±100A	±125A
Linearity limits	0~±70A	0~±80A	0~±100A
Size of primary winding	Φ1.3	□1.2 x 2	□1.2 x 2
Turns	1	1	1
Rated output [Vh]	±4V±1.5% (RL=10kΩ)		
Residual output [Vo]	Within ±30mV		
Output linearity	Within ±0.5%		
Response time	Within 3μs (at di/dt=If/μs)		
Response performance	Within 20%		
Hysteresis voltage range	Within 50mV		
Output Temp. Coef.	Within ±0.04%/°C		
Residual output Temp. Coef.	Within ±1mV/°C		
Control power supply	±15V±5%		
Consumption current	20mA+(Input current x N)/1270		
Operating Temp.	-10°C~+80°C		
Storage Temp.	-15°C~+85°C		
Dielectric withstand voltage	2500V AC 50/60Hz 1minute		
Insulation resistance	Not less than 500MΩ 500V DC		

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

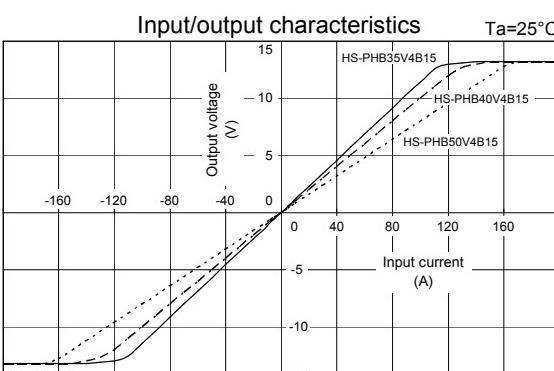
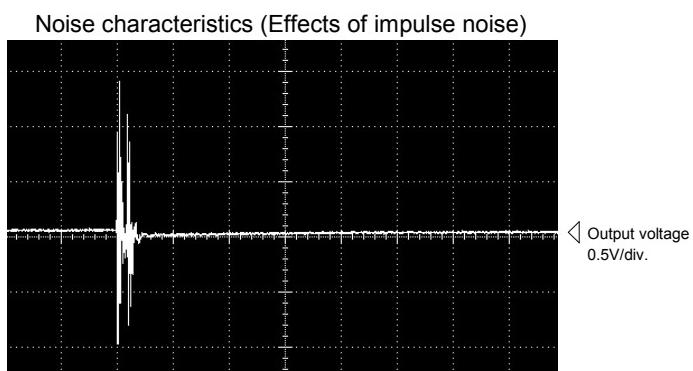
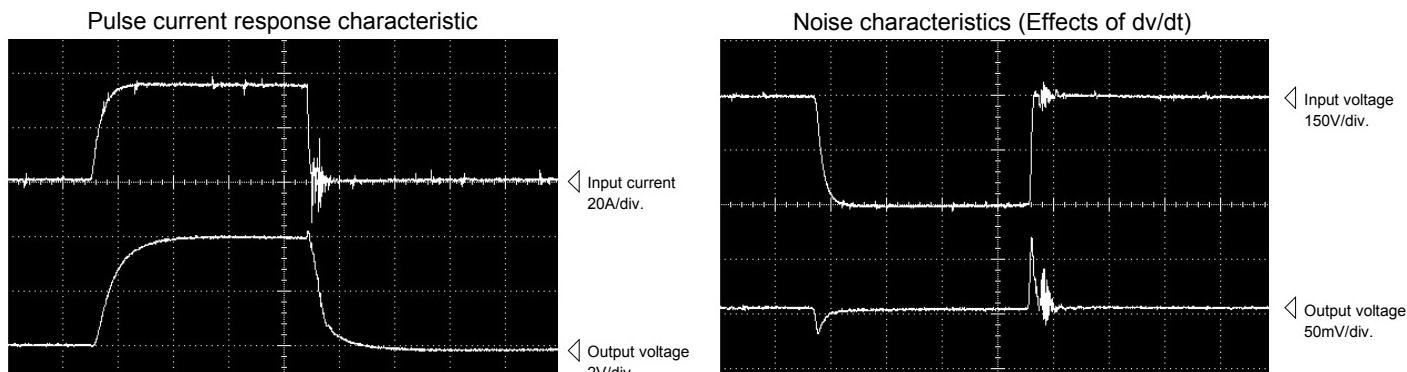
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-PHB35V4B15 (RL=10kΩ)

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-PKF



- Rated current 50A ~ 100A

- Realized high precision and compact size

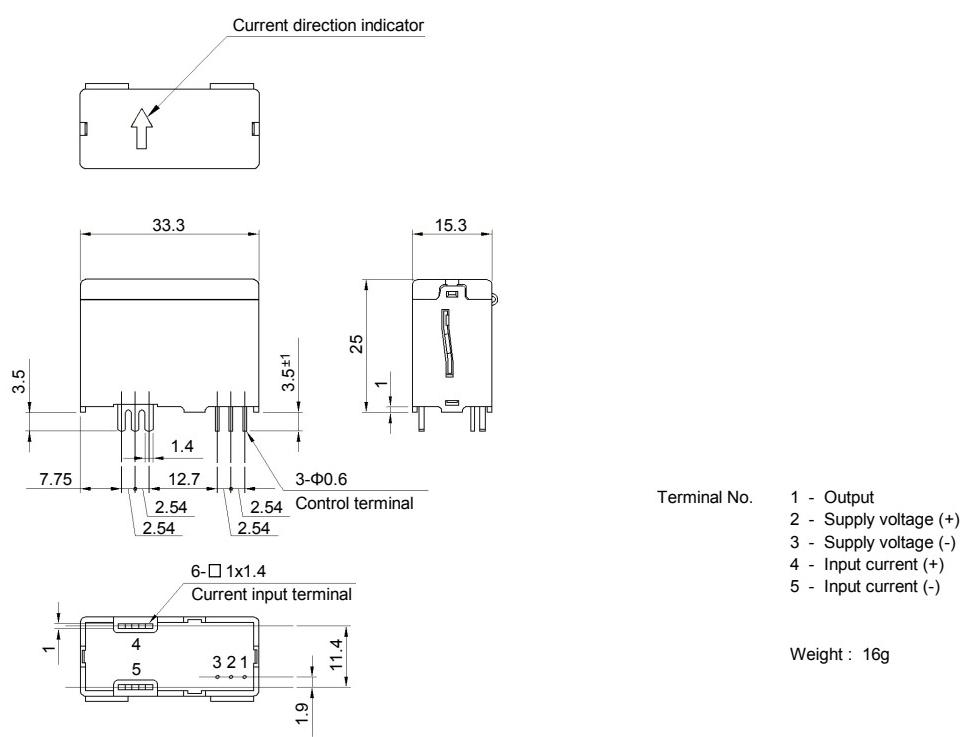
- Superior in response, linearity and temperature characteristics

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

		Voltage output type	
Type		HS-PKF050A0025B15	HS-PKF100A005B15
Rated current [If]		±50A	±100A
Continuously flowing DC current		±50A	±71A
Saturation current [Is]		±100A	±160A
Linearity limits		0~±100A (RL=45Ω)	0~±160A (RL=45Ω)
Rated output	+If	I0+25mA±0.5%	I0+50mA±0.5%
	-If	I0-25mA±0.5%	I0-50mA±0.5%
Residual output [I0]		Within ±0.2mA	
Output linearity		Within ±0.15% at If	
Second coil resistance		Approx. 82Ω	
Response time		Within 0.5μs (at di/dt=If/μs)	
Response performance		Within 10% (at di/dt=If/μs)	
Hysteresis voltage range		Within 0.15mA	
Output Temp. Coef.		Within ±0.01%/°C	
Residual output Temp. Coef.		Within ±0.005mA/°C	
Control power supply		±15V±5%	
Consumption current		20mA+(Input current/2000)	
Operating Temp.		-25°C~+85°C	
Storage Temp.		-40°C~+90°C	
Dielectric withstand voltage		2500V AC 50/60Hz 1minute	
Insulation resistance		Not less than 500MΩ 500V DC	

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

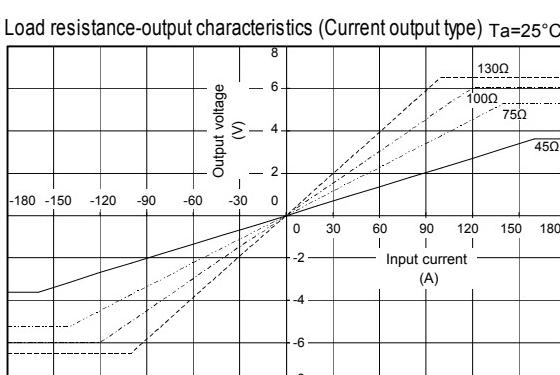
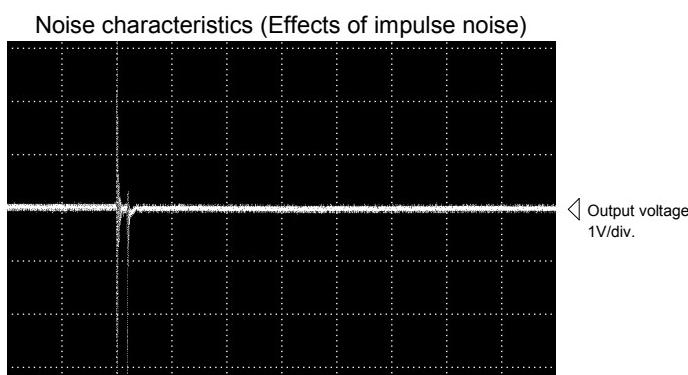
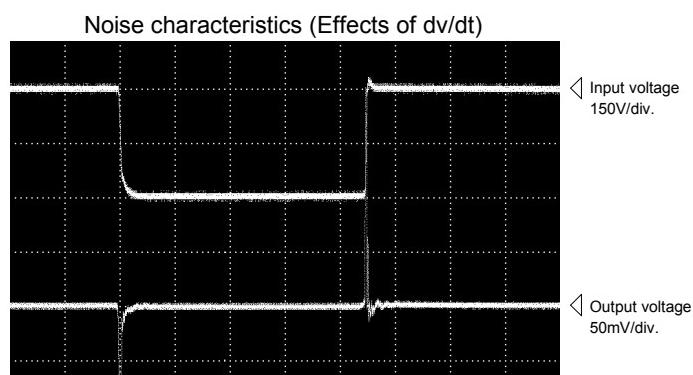
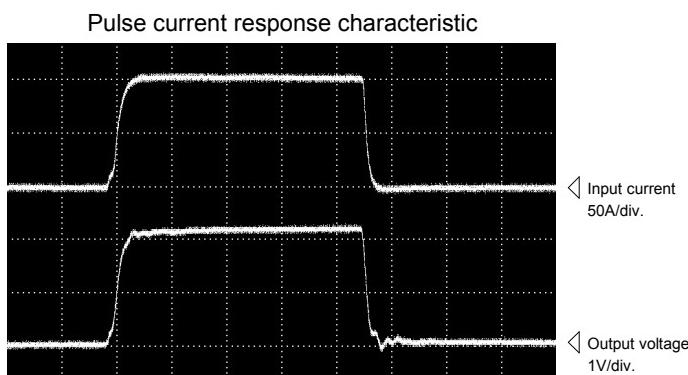
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-PKF100A005B15 (RL=45Ω)

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-P



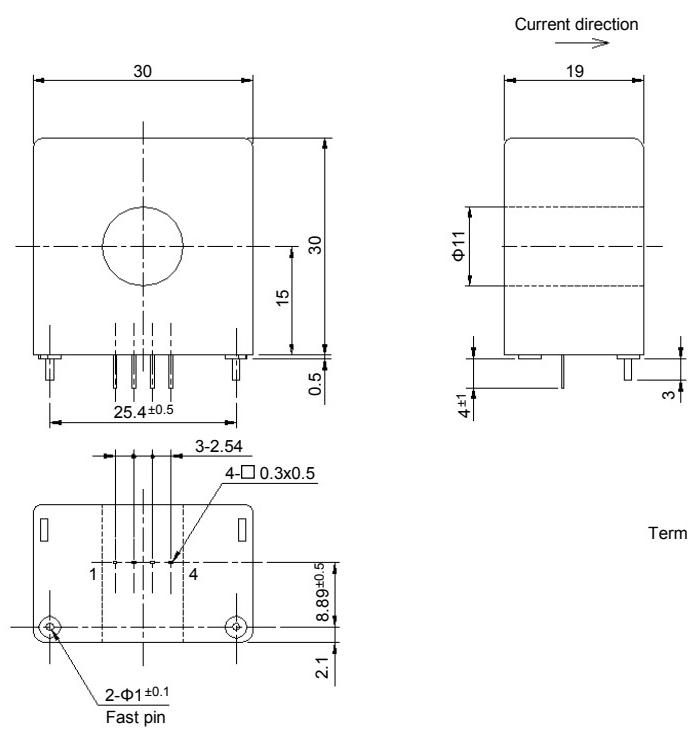
- Rated current 50A ~ 100A
- Superior in response, linearity and temperature characteristics
- Both the voltage output and the current output were prepared

Applications

Inverters, Srevo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	Voltage output type		Current output type	
	HS-P050V4B15	HS-P100V4B15	HS-P050A005B15	HS-P100A005B15
Rated current [If]	±50A	±100A	±50A	±100A
Continuously flowing DC current	±50A	±100A	±50A	±100A
Saturation current [Is]	±100A	±150A	±80A	±150A
Linearity limits	0~±100A	0~±150A	0~±80A (RL=50Ω)	0~±150A (RL=40Ω)
Rated output [Vh]	±4V±1% (RL=10kΩ)		±50mA±1%	
Residual output [Vo]	Within ±20mV		Within ±0.2mA	
Output linearity	Within ±0.5%			
Second coil resistance	Approx. 100Ω		Approx. 51Ω	Approx. 100Ω
Response time	Within 1μs (The smaller one on either at di/dt = 100A/μs or If/μs.)			
Response performance	Within 10%			
Hysteresis voltage range	Within 30mV		Within 0.2mA	
Output Temp. Coef.	Within ±0.02%/°C			
Residual output Temp. Coef.	Within ±1mV/°C		Within ±0.01mA/°C	
Control power supply	±15V±5%			
Consumption current	20mA+(Input current/2000)	20mA+(Input current/1000)	20mA+(Input current/2000)	
Operating Temp.	-10°C~+80°C			
Storage Temp.	-15°C~+85°C			
Dielectric withstand voltage	2500V AC 50/60Hz 1minute			
Insulation resistance	Not less than 500MΩ 500V DC			

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

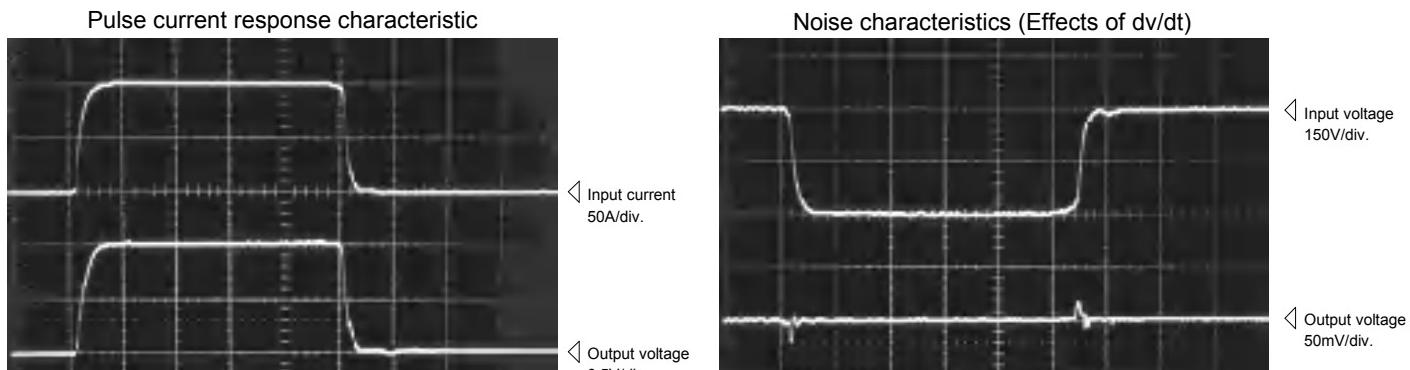
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

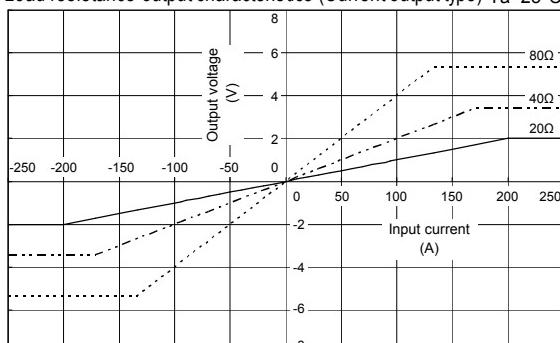
Characteristics chart

HS-P100A005B15 (RL=20Ω)

5μs/div. Time base



Load resistance-output characteristics (Current output type) Ta=25°C



Note: The marks "△" means 0V or 0A.

HS-PKD



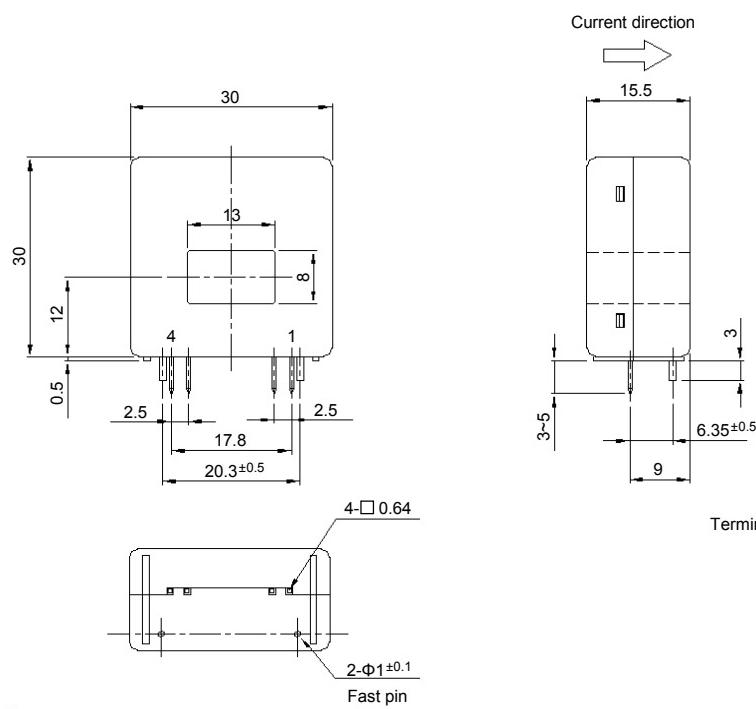
- Rated current 50A ~ 150A
- Realized high precision and compact size
- Superior in response, linearity and temperature characteristics
- Both the voltage output and the current output were prepared

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

		Voltage output type			Current output type			
Type		HS-PKD050V4B15	HS-PKD100V4B15S	HS-PKD150V4B15S	HS-PKD050A0025B15	HS-PKD100A005B15		
Rated current [If]		±50A	±100A	±150A	±50A	±100A		
Continuously flowing DC current		±50A	±72A	±108A	±50A	±72A		
Saturation current [Is]		±125A	±250A	±375A	±100A	±150A		
Linearity limits		0~±100A	0~±200A	0~±300A	0~±100A (RL=100~180Ω)	0~±150A (RL=120Ω)		
Rated output	+If	V0+4V±1% (RL=10kΩ)			I0+25mA±1%	I0+50mA±1%		
	-If	V0-4V±1% (RL=10kΩ)			I0-25mA±1%	I0-50mA±1%		
Residual output [V0, I0]		Within ±20mV			Within ±0.2mA			
Output linearity		Within ±0.5%						
Second coil resistance		Approx. 47Ω	Approx. 63Ω	Approx. 38Ω				
Response time		Within 1μs (The smaller one on either at $dI/dt = 100A/\mu s$ or $If/\mu s$.)						
Response performance		Within 10%						
Hysteresis voltage range		Within 20mV			Within 0.2mA			
Output Temp. Coef.		Within ±0.01%/°C						
Residual output Temp. Coef.		Within ±0.8mV/°C			Within ±0.01mA/°C			
Control power supply		±15V±5%						
Consumption current		20mA+(Input current/2500)	20mA+(Input current/3200)	20mA+(Input current/2000)				
Operating Temp.		-10°C~+80°C						
Storage Temp.		-15°C~+85°C						
Dielectric withstand voltage		2500V AC 50/60Hz 1minute						
Insulation resistance		Not less than 500MΩ 500V DC						

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

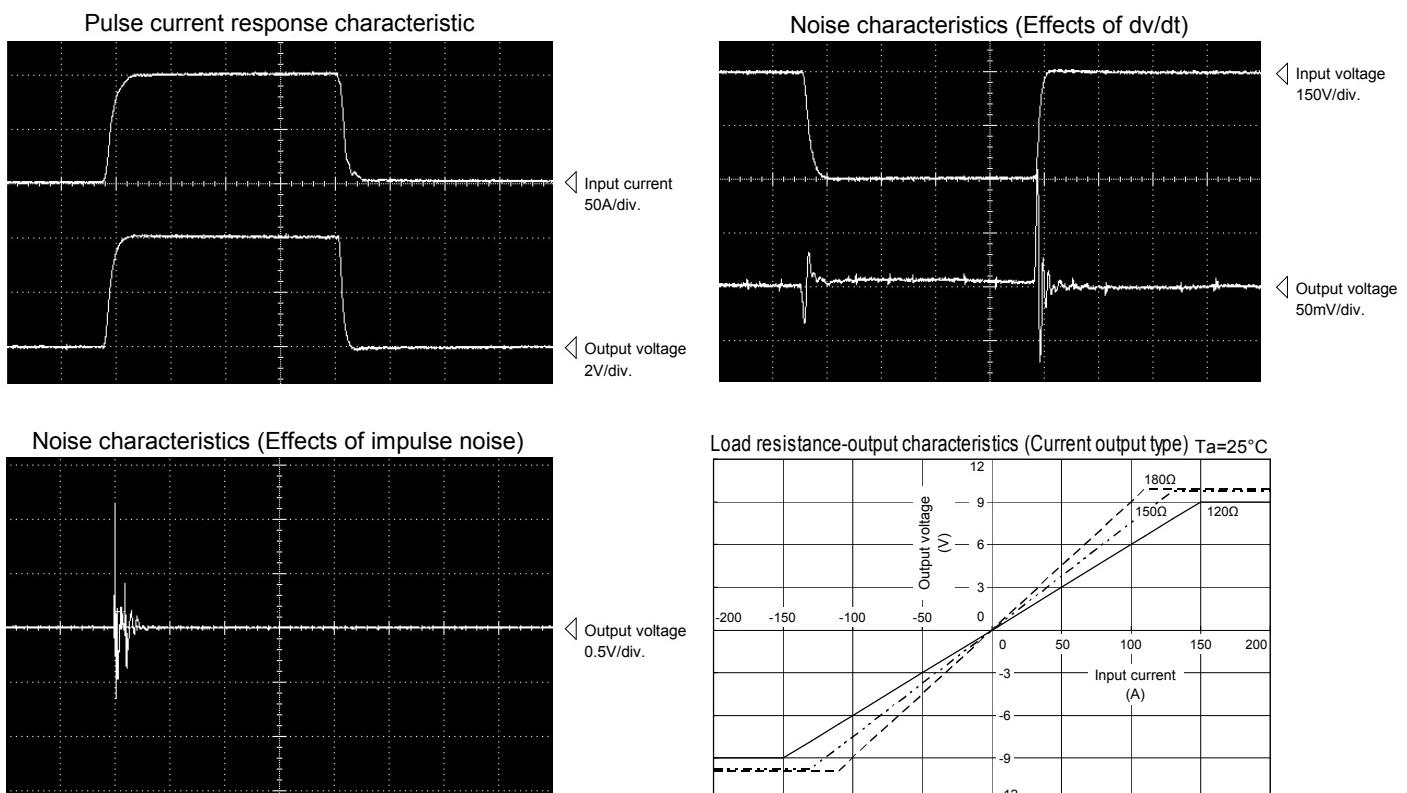
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-PKD100V4B15S

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-PTF



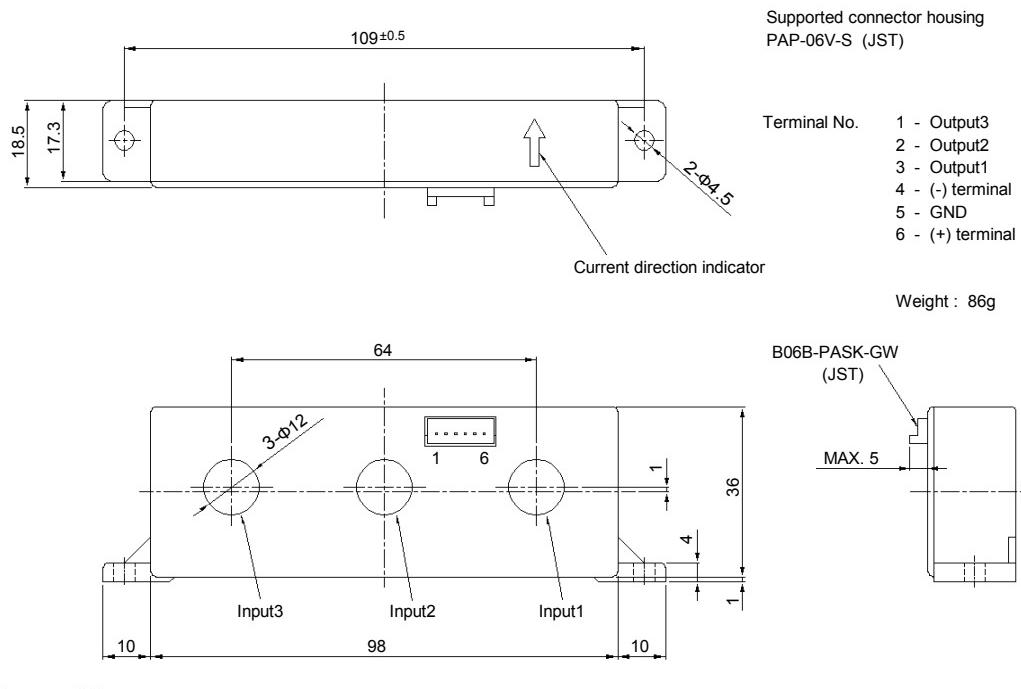
- Rated current 50A ~ 100A
- Three circuits can be measured at the same time
- Realized high precision and compact size
- Superior in response, linearity and temperature characteristics
- Both the voltage output and the current output were prepared

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	Voltage output type		Current output type			
	HS-PTF050V4B15	HS-PTF100V4B15	HS-PTF050A00125B15	HS-PTF100A0025B15		
Rated current [If]	±50A	±100A	±50A	±100A		
Continuously flowing DC current	±50A	±100A	±50A	±100A		
Saturation current [Is]	±150A	±200A	±150A	±200A		
Linearity limits	0~±125A	0~±200A	0~±150A (RL=50~150Ω)	0~±200A (RL=50~100Ω)		
Rated output	+If	V0+4V±1% (RL=10kΩ)	I0+12.5mA±1%	I0+25mA±1%		
	-If	V0-4V±1% (RL=10kΩ)	I0-12.5mA±1%	I0-25mA±1%		
Residual output [V0, I0]	Within ±20mV		Within ±0.2mA			
Output linearity	Within ±0.5%					
Second coil resistance	Approx. 120Ω					
Response time	Within 1μs (The smaller one on either at $di/dt = 100A/\mu s$ or $If/\mu s$.)					
Response performance	Within 10%					
Hysteresis voltage range	Within 20mV		Within 0.2mA			
Output Temp. Coef.	Within ±0.02%/°C					
Residual output Temp. Coef.	Within ±1mV/°C		Within ±0.01mA/°C			
Control power supply	±15V±5%					
Consumption current	60mA+(Input current/4000)					
Operating Temp.	-10°C~+80°C					
Storage Temp.	-15°C~+85°C					
Dielectric withstand voltage	2500V AC 50/60Hz 1minute					
Insulation resistance	Not less than 500MΩ 500V DC					

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

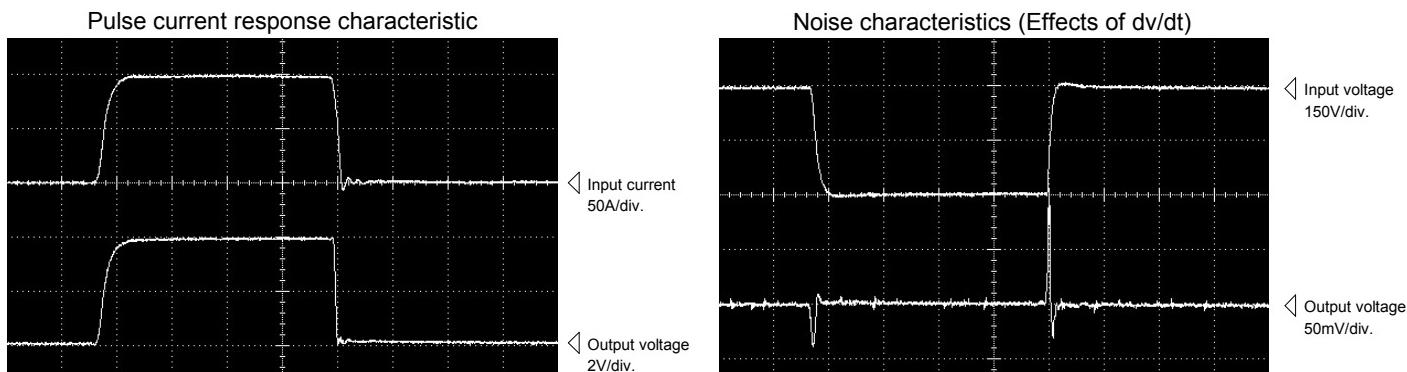
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

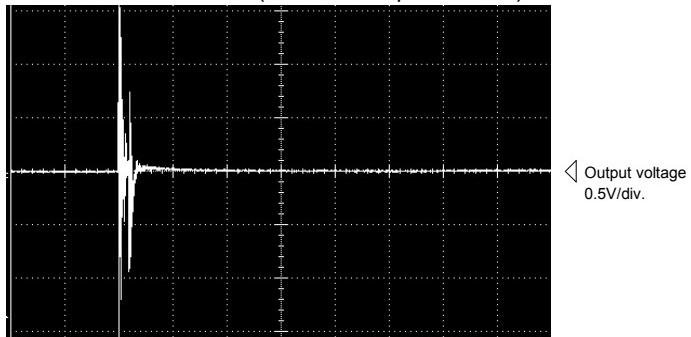
Characteristics chart

HS-PTF100V4B15

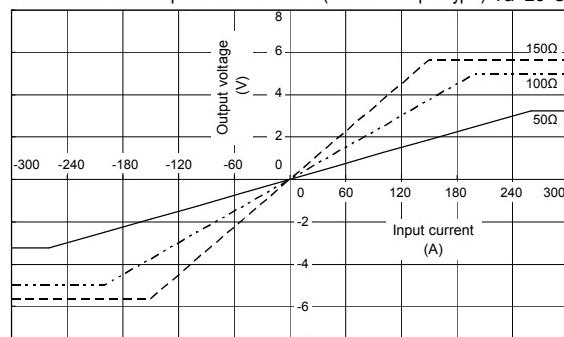
5μs/div. Time base



Noise characteristics (Effects of impulse noise)



Load resistance-output characteristics (Current output type) Ta=25°C



Note: The marks "△" means 0V or 0A.

HS-U



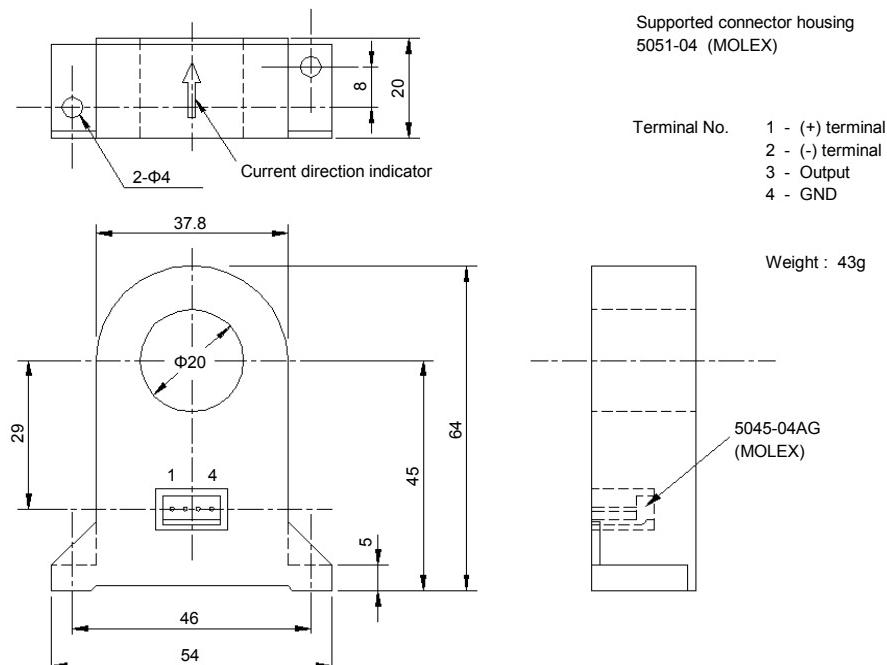
- Rated current 50A ~ 300A
- Superior in response, linearity and temperature characteristics
- Both the voltage output and the current output were prepared

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	Voltage output type			Current output type		
	HS-U050V4B15	HS-U100V4B15	HS-U300V4B15	HS-U050A005B15	HS-U100A005B15	HS-U300A015B15
Rated current [If]	±50A	±100A	±300A	±50A	±100A	±300A
Continuously flowing DC current	±50A	±100A	±150A	±50A	±100A	±300A
Saturation current [Is]	±150A	±300A	±390A	±150A	±300A	±300A
Linearity limits	0~±150A	0~±300A	0~±360A	0~±150A (RL=50Ω)	0~±300A (RL=20Ω)	0~±300A (RL=20Ω)
Rated output [Vh]	±4V±1% (RL=10kΩ)			±50mA±1%		±150mA±1%
Residual output [Vo]	Within ±20mV			Within ±0.2mA		
Output linearity	Within ±0.5%					
Second coil resistance	Approx. 25Ω	Approx. 50Ω	Approx. 25Ω	Approx. 50Ω		
Response time	Within 1μs (The smaller one on either at di/dt = 100A/μs or If/μs.)					
Response performance	Within 10%					
Hysteresis voltage range	Within 20mV			Within 0.2mA		
Output Temp. Coef.	Within ±0.02%/°C					
Residual output Temp. Coef.	Within ±1mV/°C			Within ±0.01mA/°C		
Control power supply	±15V±5%					
Consumption current	20mA+(Input current/1000)	20mA+(Input current/2000)	20mA+(Input current/1000)	20mA+(Input current/2000)		
Operating Temp.	-10°C~+80°C					
Storage Temp.	-15°C~+85°C					
Dielectric withstand voltage	2500V AC 50/60Hz 1minute					
Insulation resistance	Not less than 500MΩ 500V DC					

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

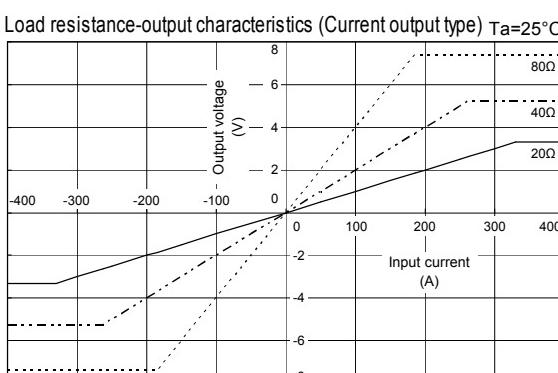
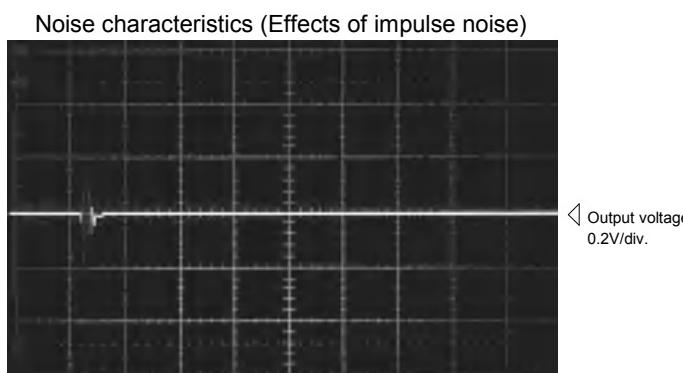
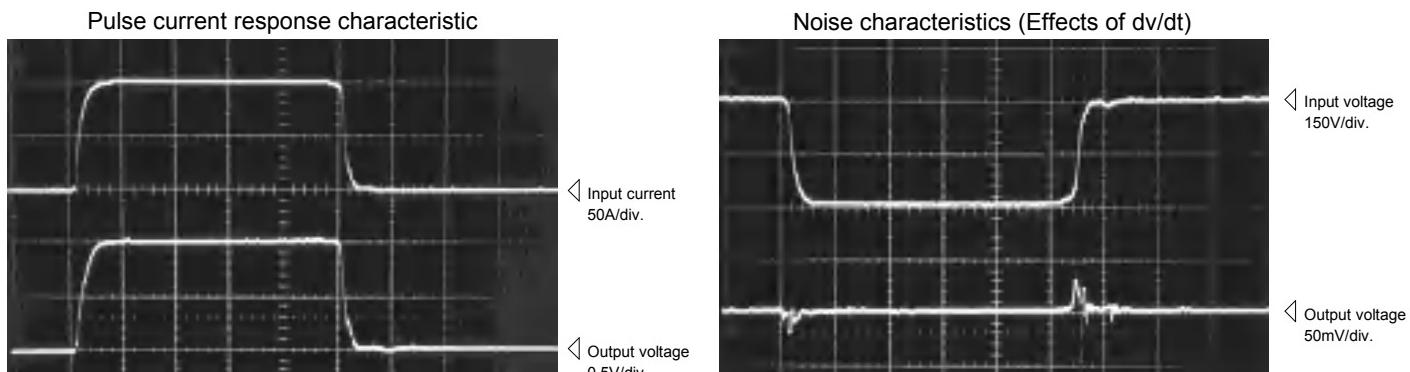
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-U100A005B15 (RL=20Ω)

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-UF



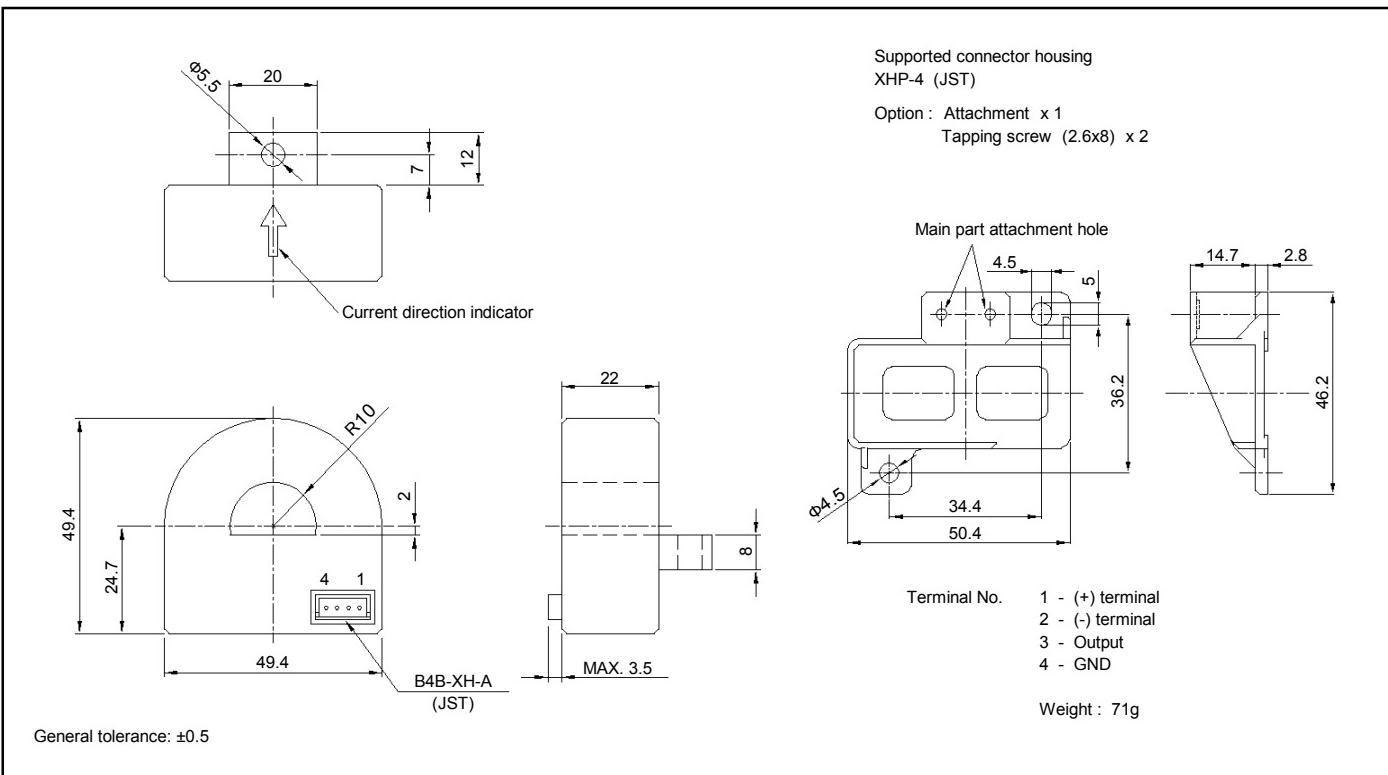
- Rated current 100A ~ 300A
- Superior in response, linearity and temperature characteristics
- Both the voltage output and the current output were prepared
- Optional attachment to enable bolt-on attachment is available

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

		Voltage output type			Current output type						
Type		HS-UF100V4B15	HS-UF200V4B15	HS-UF300V4B15	HS-UF100A0025B15	HS-UF200A005B15	HS-UF300A0075B15				
Rated current [If]		±100A	±200A	±300A	±100A	±200A	±300A				
Continuously flowing DC current		±100A	±200A	±230A	±100A	±200A	±230A				
Saturation current [Is]		±300A	±600A	±750A	±300A	±600A	±750A				
Linearity limits		0~±250A	0~±500A	0~±700A	0~±250A (RL=10~100Ω)	0~±500A (RL=10~25Ω)	0~±700A (RL=10Ω)				
Rated output	+If	V0+4V±1% (RL=10kΩ)			I0+25mA±1%	I0+50mA±1%	I0+75mA±1%				
	-If	V0-4V±1% (RL=10kΩ)			I0-25mA±1%	I0-50mA±1%	I0-75mA±1%				
Residual output [V0, I0]		Within ±20mV			Within ±0.2mA						
Output linearity		Within ±0.5%									
Second coil resistance		Approx. 48Ω									
Response time		Within 1μs (at di/dt=100A/μs)									
Response performance		Within 10%									
Hysteresis voltage range		Within 20mV		Within 0.2mA							
Output Temp. Coef.		Within ±0.02%/°C									
Residual output Temp. Coef.		Within ±1mV/°C		Within ±0.01mA/°C							
Control power supply		±15V±5%									
Consumption current		20mA+(Input current/4000)									
Operating Temp.		-10°C~+80°C									
Storage Temp.		-15°C~+85°C									
Dielectric withstand voltage		2500V AC 50/60Hz 1minute									
Insulation resistance		Not less than 500MΩ 500V DC									

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

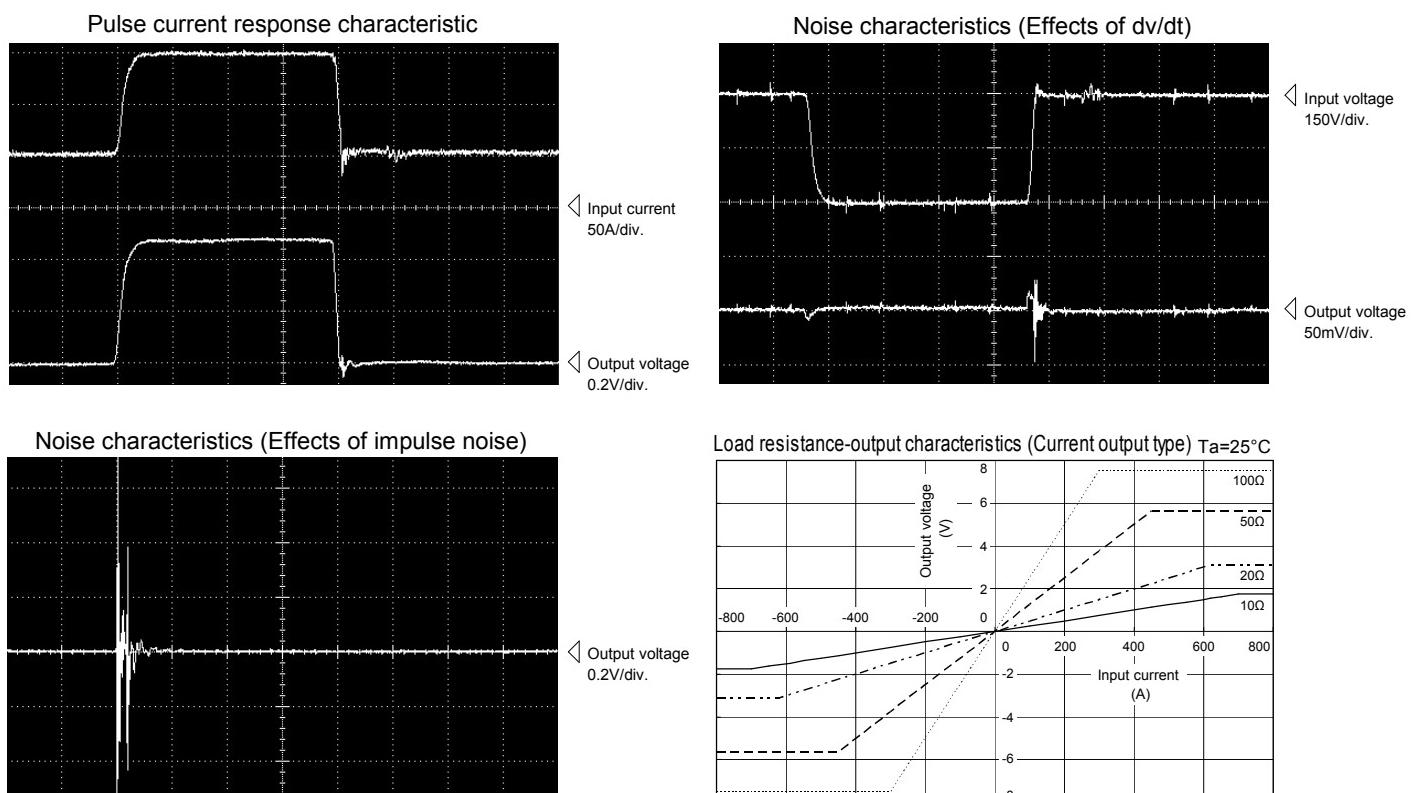
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-UF200A005B15 (RL=20Ω)

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-UD



- Rated current 300A ~ 500A

- Superior in response, linearity and temperature characteristics

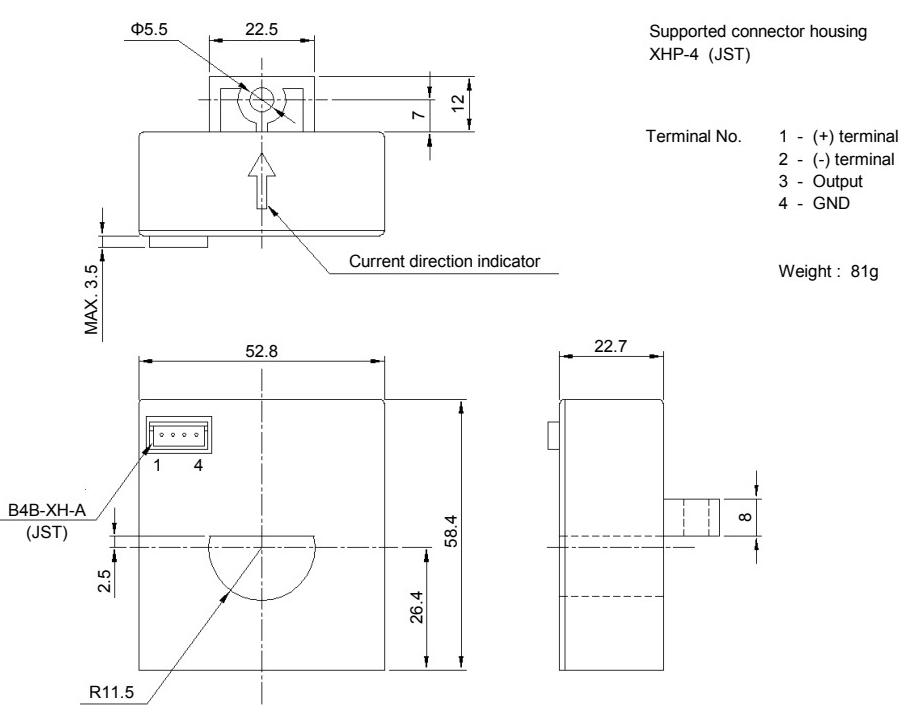
- Both the voltage output and the current output were prepared

Applications

Inverters, Servo drivers, Power supply equipment, NC machine tools

Dimensions

(mm)



Specification

Ta=25°C

Type	Voltage output type			Current output type					
	HS-UD300V4B15	HS-UD400V4B15	HS-UD500V4B15	HS-UD300A015B15	HS-UD400A020B15	HS-UD500A025B15			
Rated current [If]	±300A	±400A	±500A	±300A	±400A	±500A			
Continuously flowing DC current	±450A	±450A	±450A	±450A	±450A	±450A			
Saturation current [Is]	±900A	±1200A	±1200A	±800A	±1000A	±1200A			
Linearity limits	0~±900A	0~±1200A	0~±1200A	0~±800A (RL=10Ω)	0~±1000A (RL=5Ω)	0~±1200A (RL=1Ω)			
Rated output [Vh]	±4V±1% (RL=10kΩ)			±150mA±1%	±200mA±1%	±250mA±1%			
Residual output [Vo]	Within ±20mV			Within ±0.2mA					
Output linearity	Within ±0.5%								
Second coil resistance	Approx. 16.8Ω								
Response time	Within 1μs (The smaller one on either at di/dt = 100A/μs or If/μs.)								
Response performance	Within 10%								
Hysteresis voltage range	Within 20mV			Within 0.2mA					
Output Temp. Coef.	Within ±0.02%/°C								
Residual output Temp. Coef.	Within ±1mV/°C			Within ±0.01mA/°C					
Control power supply	±15V±5%								
Consumption current	20mA+(Input current/2000)								
Operating Temp.	-10°C~+80°C								
Storage Temp.	-15°C~+85°C								
Dielectric withstand voltage	2500V AC 50/60Hz 1minute								
Insulation resistance	Not less than 500MΩ 500V DC								

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

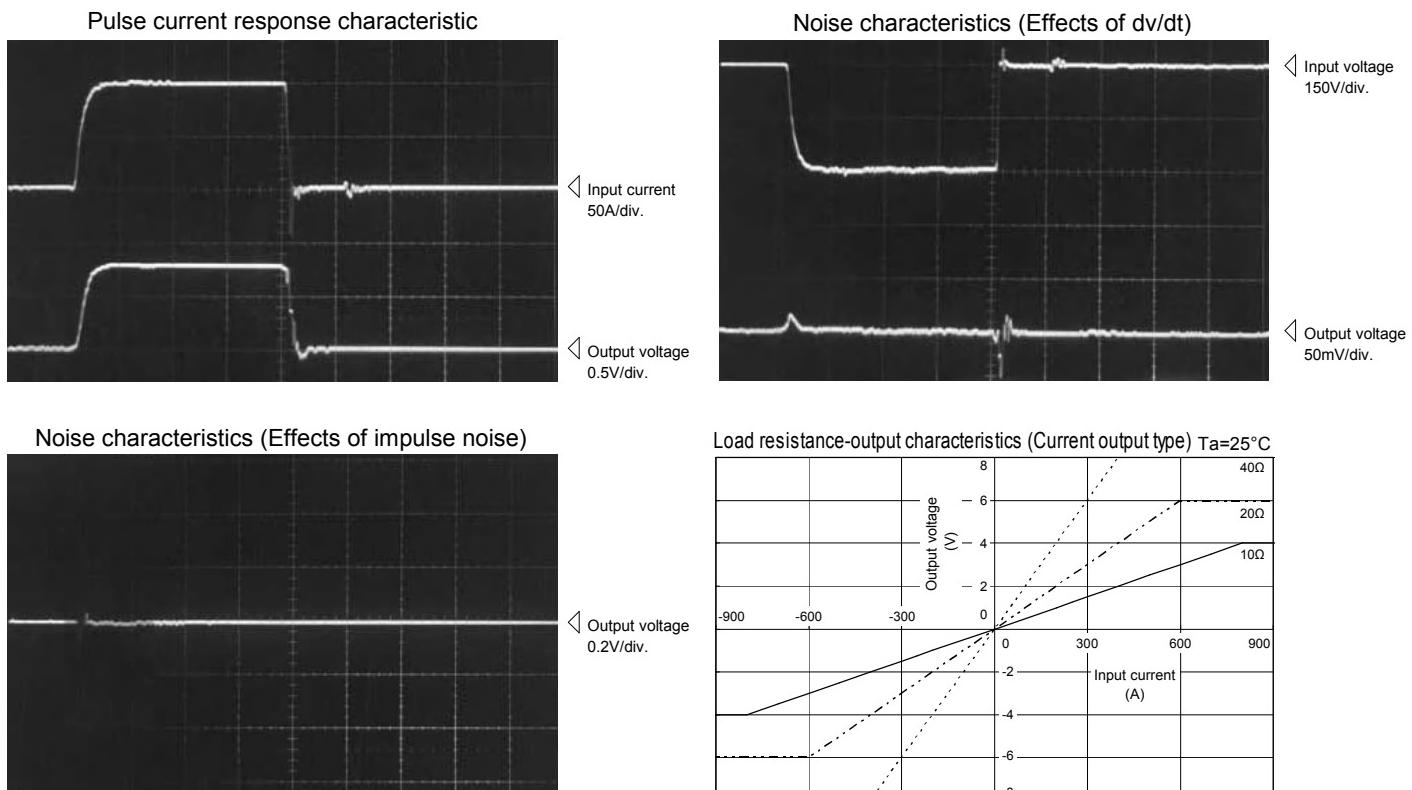
Note2) Energization time of saturation current shall be within 1 second.

Note3) Energization time of continuous live DC current x150% shall be within 1 minute.

Characteristics chart

HS-UD500V4B15

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HS-K



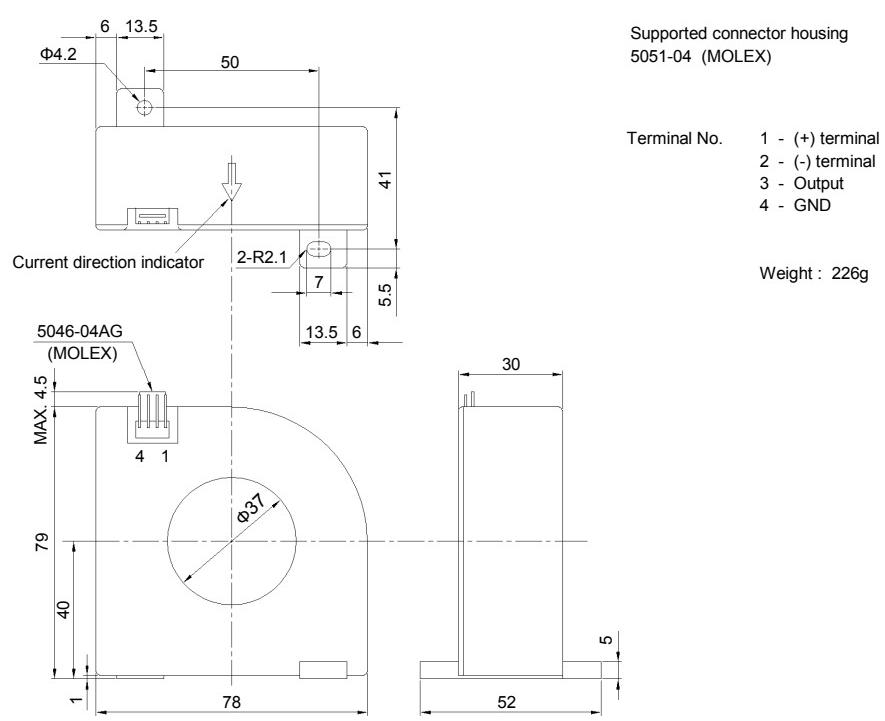
- Rated current 300A ~ 500A
 - Superior in response, linearity and temperature characteristics
 - Both the voltage output and the current output were prepared

Applications

Inverters, Power supply equipment

Dimensions

(mm)



Specification

Ta=25°C

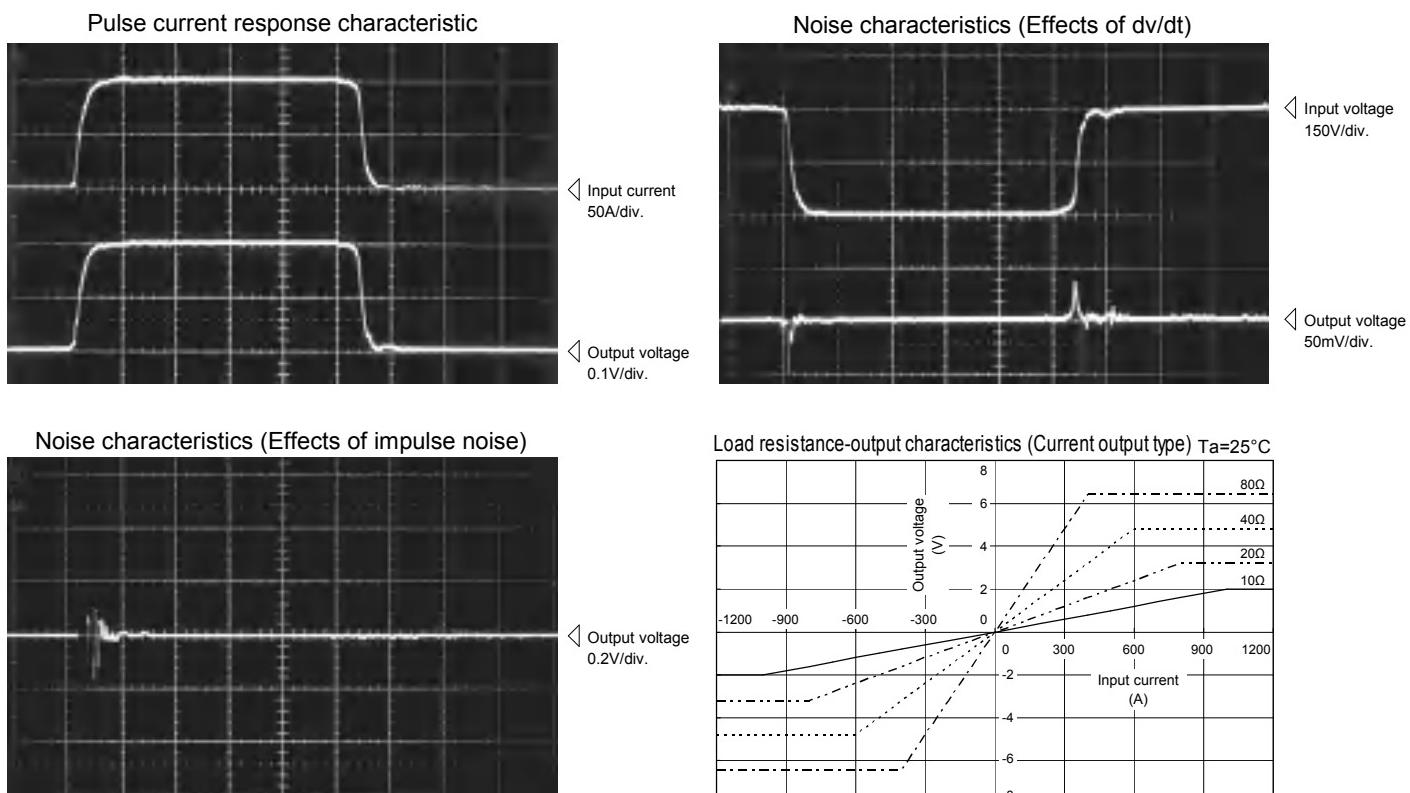
Type	Voltage output type			Current output type				
	HS-K300V4B15	HS-K400V4B15	HS-K500V4B15	HS-K300A0075B15	HS-K400A010B15	HS-K500A010B15		
Rated current [If]	±300A	±400A	±500A	±300A	±400A	±500A		
Continuously flowing DC current	±600A	±800A	±1000A	±600A	±800A	±1000A		
Saturation current [Is]	±600A	±800A	±1000A	±600A	±800A	±1000A		
Linearity limits	0~±600A	0~±800A	0~±1000A	0~±600A(RL=30Ω)	0~±800A(RL=10Ω)	0~±1000A(RL=1Ω)		
Rated output [Vh]	±4V±1% (RL=10kΩ)			±75mA±1%	±100mA±1%			
Residual output [Vo]	Within ±20mV			Within ±0.2mA				
Output linearity	Within ±0.5%							
Second coil resistance	Approx. 31Ω		Approx. 42Ω	Approx. 31Ω	Approx. 42Ω			
Response time	Within 1μs (at di/dt=100A/μs)							
Response performance	Within 20%							
Hysteresis voltage range	Within 20mV			Within 0.2mA				
Output Temp. Coef.	Within ±0.02%/°C							
Residual output Temp. Coef.	Within ±1mV/°C			Within ±0.01mA/°C				
Control power supply	±15V±5%							
Consumption current	20mA+(Input current/4000)	20mA+(Input current/5000)	20mA+(Input current/4000)	20mA+(Input current/5000)				
Operating Temp.	-10°C~+80°C							
Storage Temp.	-15°C~+85°C							
Dielectric withstand voltage	2500V AC 50/60Hz 1minute							
Insulation resistance	Not less than 500MΩ 500V DC							

Note1) The indicated rated output is the one when no load is applied.

Characteristics chart

HS-K500A010B15 (RL=10Ω)

5μs/div. Time base



Note: The marks "△" means 0V or 0A.

HD-TS



- Rated current 100A ~ 600A

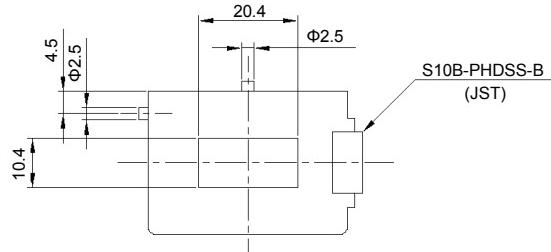
- $\Delta-\Sigma$ (delta-sigma) modulation digital output sensors excelling in the anti-noise characteristic
- It is possible to simplify the circuits on the input side as the input side requires no A/D conversion

Applications

Inverters, Servo drivers, Power supply equipment, Uninterruptible power supply (UPS), NC machine tools, Welders

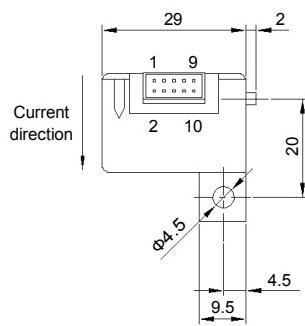
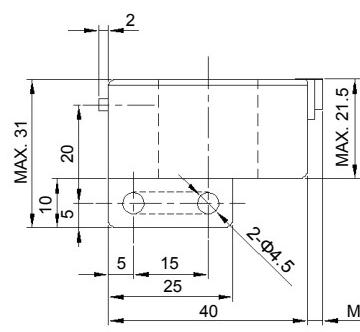
Dimensions

(mm)



Supported Connector Housing
PHDR-10VS (JST)

Terminal No.	
1	- GND
2	- (+) terminal
3	- GND
4	- (+) terminal
5	- +MDAT
6	- -MDAT
7	- +MCLK
8	- -MCLK
9	- Analog output
10	- Analog output GND



Weight : 44g

General tolerance: ± 0.5

Specification

Ta=25°C

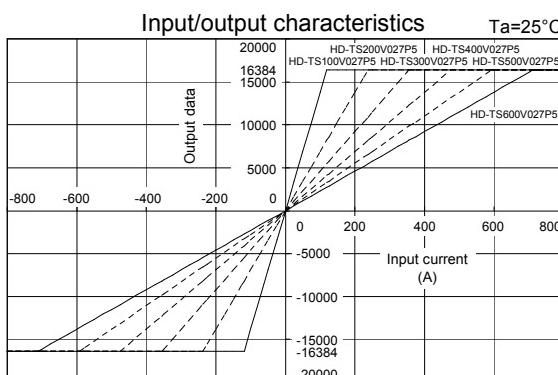
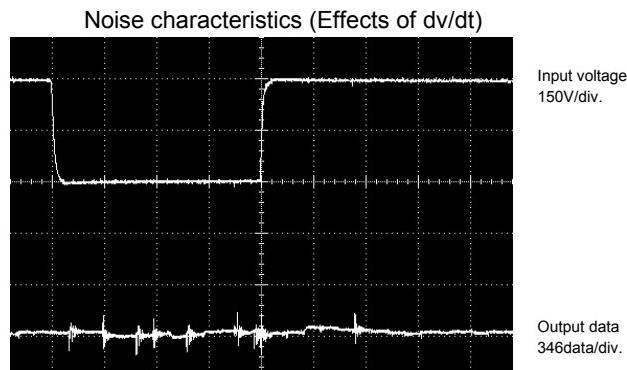
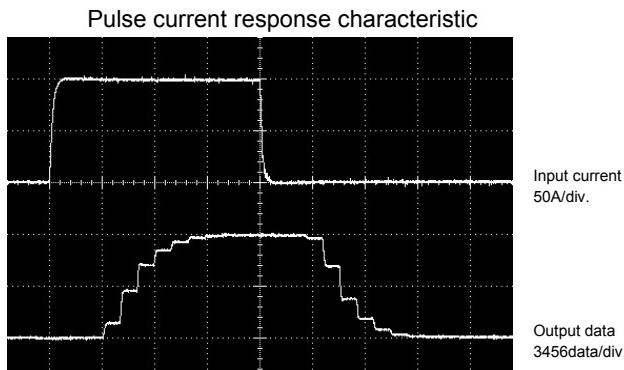
Type	HD-TS100V027P5	HD-TS200V027P5	HD-TS300V027P5	HD-TS400V027P5	HD-TS500V027P5	HD-TS600V027P5
Rated current [If]	±100A	±200A	±300A	±400A	±500A	±600A
Saturation current [Is]	±119A	±237A	±356A	±474A	±593A	±711A
Linearity limits	0~±119A	0~±237A	0~±356A	0~±474A	0~±593A	0~±711A
Base data				±16384[data] (at Is)		
Rated output data [Vh]			±13824[data] Within ±491[data] (at If)			
Residual output data [Vo]				Within ±164[data]		
Output linearity				Within ±1% (Within ±164[data])		
Response time				Within 20μs (at di/dt=100A/μs)		
Hysteresis voltage range				Within ±164[data]		
Output Temp. Coef.				Within ±0.1%/°C		
Residual output Temp. Coef.				Within ±51[data]/°C		
Control power supply				+5V±5%		
Consumption current				Within 50mA		
Operating Temp.				-10°C~+80°C		
Storage Temp.				-15°C~+85°C		
Dielectric withstand voltage				2500V AC 50/60Hz 1minute		
Insulation resistance				Not less than 500MΩ 500V DC		
Output specifications			TIA/EIA-422-B[RS422] standard serial output (data and clock output)			
Output clock frequency				10MHz±2MHz		
Others	Δ-Σ A/D converter Built-in Type	*)All the data number shall be the values at 14bit(16384[data]) in resolution				

Note1) The indicated rated output is the one when no load is applied.

Characteristics chart

HD-TS200V027P5

10μs/div. Time base



HM-B



- Rated current 300A ~ 600A

- High accuracy current sensor using flux-gate technology

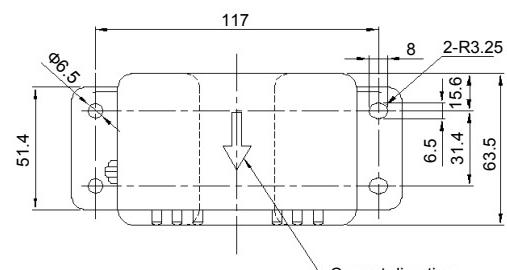
- Very low output noise

Applications

High precision power supply, Medical equipment, High precision inverter, Test equipment

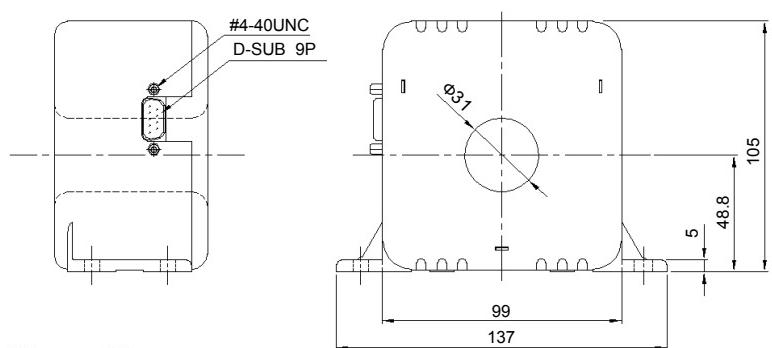
Dimensions

(mm)



Terminal No.
1 - N.C.
2 - N.C.
3 - Status output -
4 - GND
5 - -15 supply voltage
6 - Current output
7 - N.C.
8 - Status output +
9 - +15 supply voltage

Weight : 1000g



General tolerance: ±0.5

Specification

Ta=25°C

		Current output type	
Type		HM-B300A02B15	HM-B600A04B15
Rated current [If]		±300A	±600A
Continuously flowing DC current		±300A	±600A
Min.overload trip current [Is]		≥±850A (RL ≤ 5Ω) ≥±950A (RL ≤ 2.5Ω)	0~±700A(RL ≤ 5Ω) 0~±800A(RL ≤ 2.5Ω)
Linearity limits	+If	I0+200mA±300ppm	I0+400mA±300ppm
Rated output	-If	I0-200mA±300ppm	I0-400mA±300ppm
Residual output [Io]		Within ±10µA	
Output linearity		Within ±10ppm	
Second coil resistance		Approx. 14Ω	
Response time		Within 1µs (at di/dt=100A/µs)	
Response performance		Within 35%	
Hysteresis voltage range		Within 15µA	
Output Temp. Coef.		Within ±5ppm/°C	
Residual output Temp. Coef.		Within ±0.2µA/°C	
Control power supply		±15V±5%	
Consumption current		250mA+(Input current/1500)	
Operating Temp.		+10°C~+50°C	
Storage Temp.		0°C~+60°C	
Operation status(Photoocupuler output)		Open collector (Imax=6mA Vmax=+15V), Active low (Normal operation)	
Dielectric withstand voltage		2500V AC 50/60Hz 1minute	
Insulation resistance		Not less than 500MΩ 500V DC	

Note1) The indicated residual voltage is the one after the core hysteresis is removed.

Note2) Energization time of continuous live DC current x110% shall be within 1 minute.

Note3) If the current is higher than this, the inside circuit will shut down and the output will be almost zero.

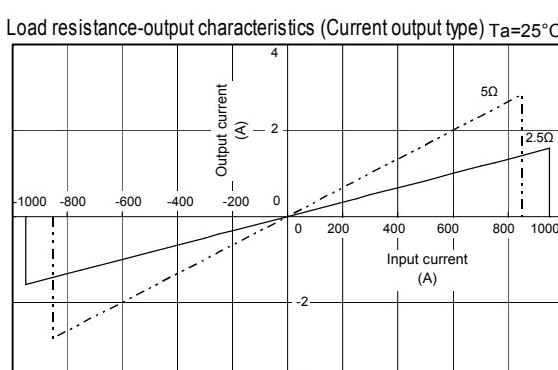
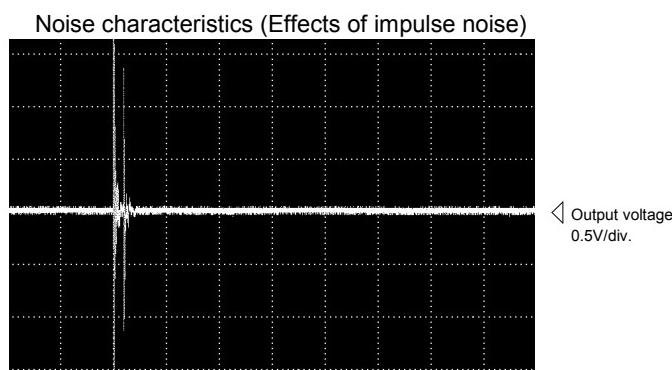
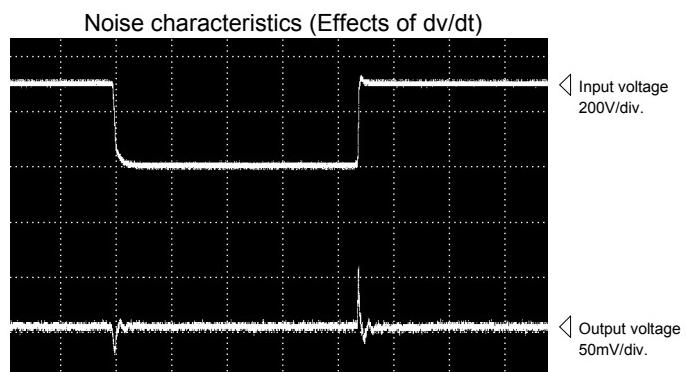
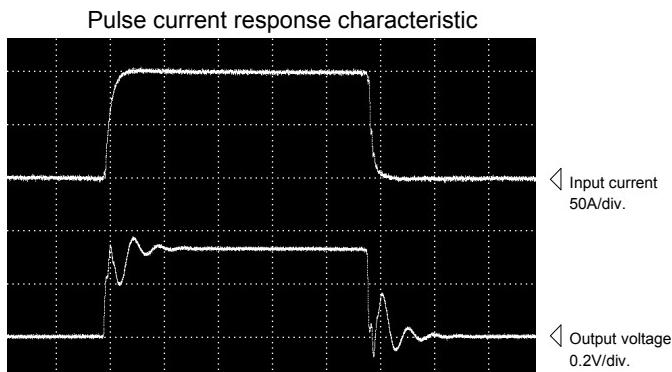
Note4) Denotes the range of the input current value for which the output is within 0.1% of the estimate output voltage.

Note5) It is a signal that indicates the inside circuit operation; it indicates Lo level under normal operation, and Hi level when the inner circuit is shut down because of an over current.

Characteristics chart

HM-B600A04B15 (RL=5Ω)

5µs/div. Time base



Note: The marks "△" means 0V or 0A.

HA-A



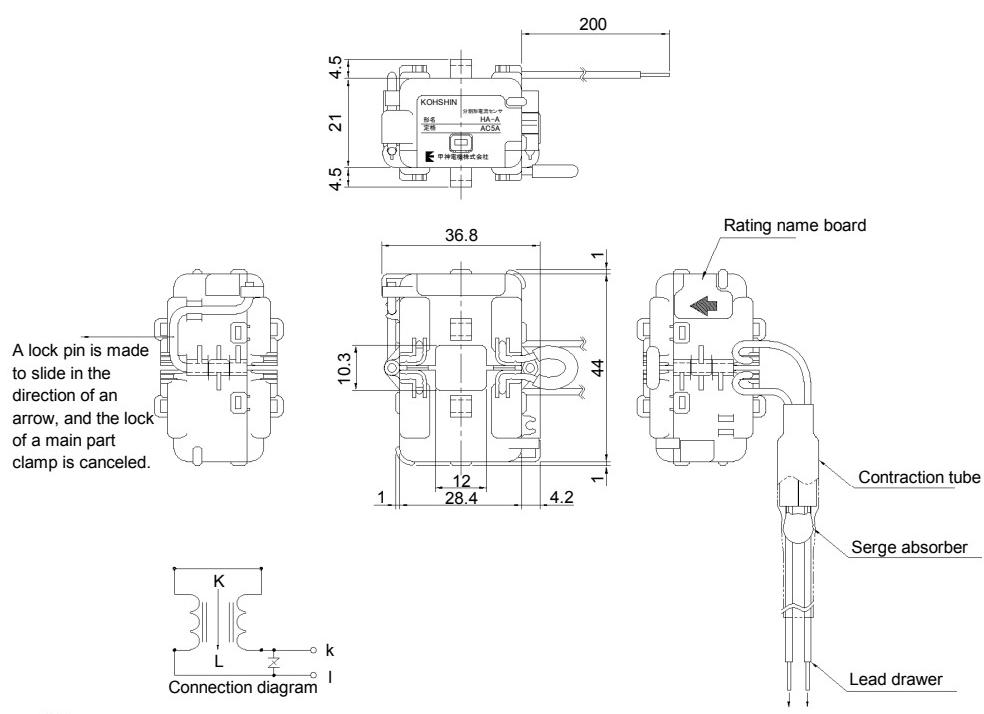
- Rated primary current 5A
- Most suitable for energy measurement which is more less dispersion in ratio error and phase displacement
- Symmetrical divided core prevents influence of external magnetic field
- Excellent frequency characteristics enabling pulse current measurement
- Simple mounting for exiting panel which is clamp type
- Internal output protection circuit

Applications

Energy measurement unit, Transmit detection of apparatus, Signal detection

Dimensions

(mm)



Specification

Ta=25°C

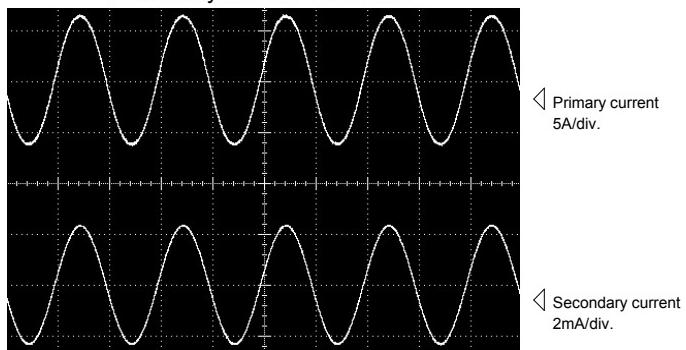
Type	HA-A005-016
Rated primary current [If]	5A
Measuring bound	0.25~5Arms
Frequency	45~65Hz
Saturation current [If]	25A
Rated secondary current	1.67mA rms
Ratio error	±1% (RL=200Ω)
Dispersion in phase displacement	±45minute (0.1If~If RL=200Ω) ±60minute (0.05If RL=200Ω)
Operating Temp.	-10°C~+55°C
Storage Temp.	-20°C~+60°C
Dielectric withstand voltage	1000V AC 1minute
Insulation resistance	Not less than 10MΩ 500V DC
Others	Internal output protection circuit

Characteristics chart

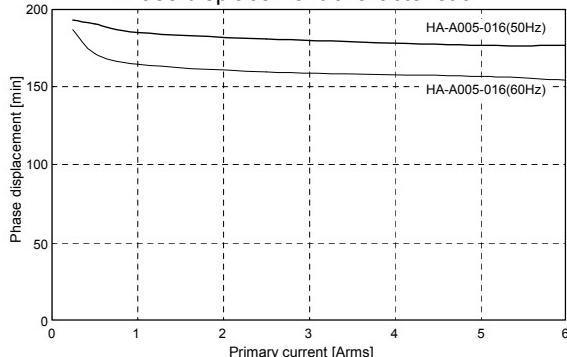
HA-A005-016

10ms/div. Time base

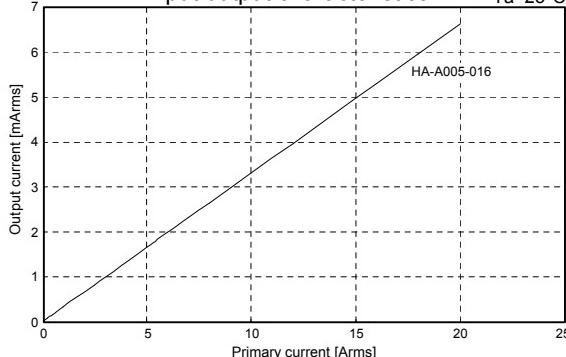
Secondary current waveform



Phase displacement characteristic



Input/output characteristics



Note: The marks "△" means 0V or 0A.

HA-B, HA-C



- Rated primary current 50A ~ 250A

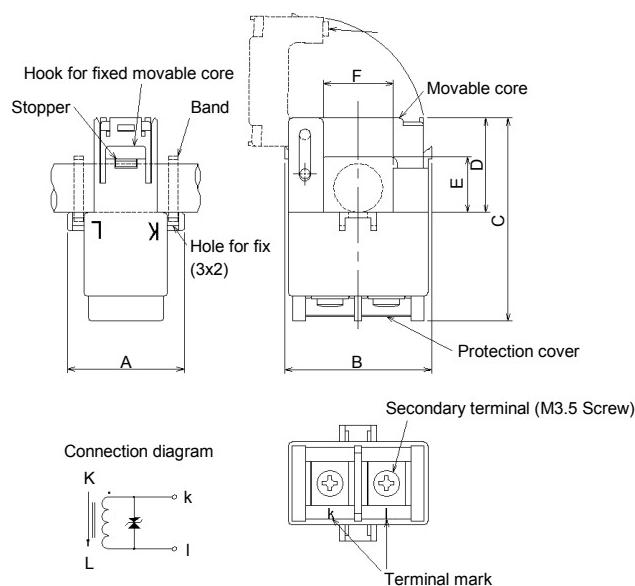
- Most suitable for energy measurement which is more less dispersion in ratio error and phase displacement
- Simple mounting for exiting panel which is clamp type
- Internal output protection circuit

Applications

Energy measurement unit

Dimensions

(mm)



Type	A	B	C	D	E	F	Weight (g)
HA-B050-16	31.5	39.6	55.2	25.7	15.2	18.8	65
HA-B100-33							
HA-C250-66	36.5	44	66	32.5	22	24	104

General tolerance: ± 0.5

Specification

Ta=25°C

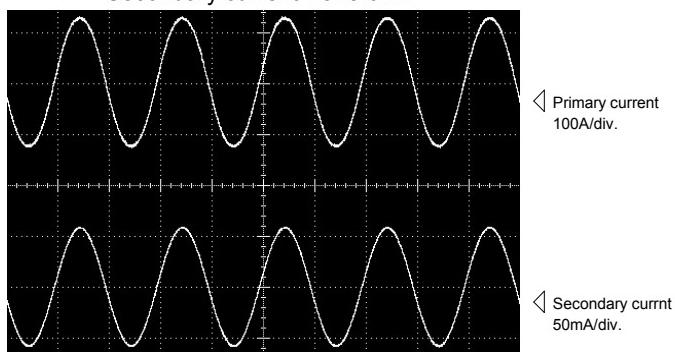
Type	HA-B050-16	HA-B100-33	HA-C250-66
Rated primary current [If]	50Arms	100Arms	250Arms
Measuring bound	2.5~50Arms	5~100Arms	12.5~250Arms
Frequency	45~65Hz		
Saturation current [If]	140Arms		350Arms
Rated secondary current	16.67mA rms	33.33mA rms	66.67mA rms
Ratio error	$\pm 1.2\%$ ($RL \leq 10\Omega$)		
Dispersion in phase displacement	± 40 minute ($RL \leq 10\Omega$)		
Operating Temp.	-10°C ~ +55°C		
Storage Temp.	-20°C ~ +60°C		
Dielectric withstand voltage	2500V AC 1 minute		
Insulation resistance	Not less than 10MΩ 500V DC		
Insulation distance	Not less than 8mm		
Others	Internal output protection circuit		

Characteristics chart

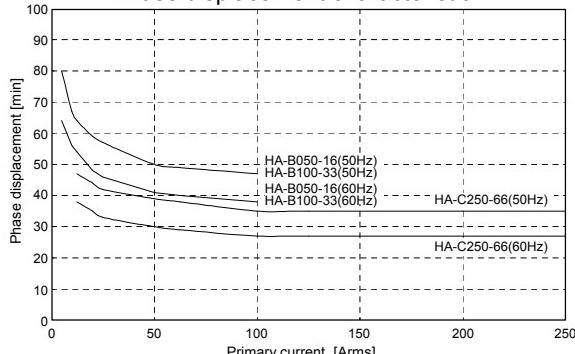
HA-B100-33

10ms/div. Time base

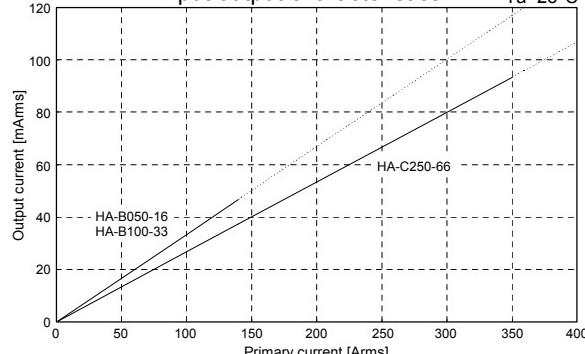
Secondary current waveform



Phase displacement characteristic



Input/output characteristics



Note: The marks "△" means 0V or 0A.

HA-BV, HA-CV



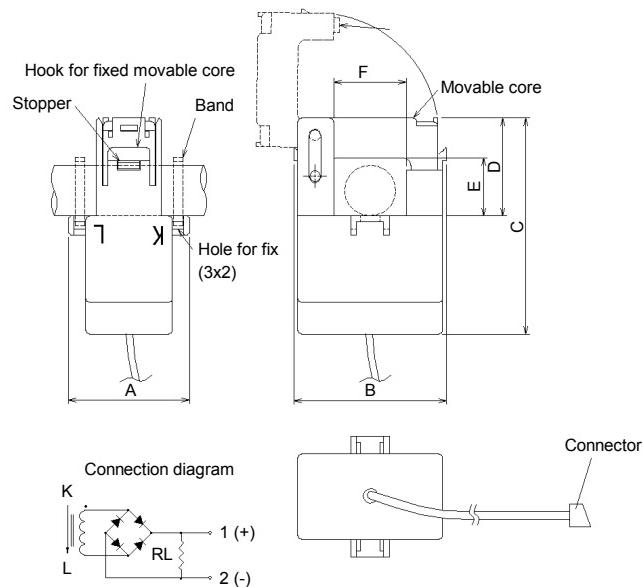
- Rated current 50A ~ 250A
- Simple mounting for exiting panel which is clamp type
- Internal rectification circuit DC-V output type

Applications

Energy measurement unit

Dimensions

(mm)



Type	A	B	C	D	E	F	Weight (g)
HA-B050-V5	31.5	39.6	56.7	25.7	15.2	18.8	88
HA-B100-V5							
HA-C250-V5	36.5	44	67.4	32.5	22	24	124

General tolerance: ± 0.5

Specification

Ta=25°C

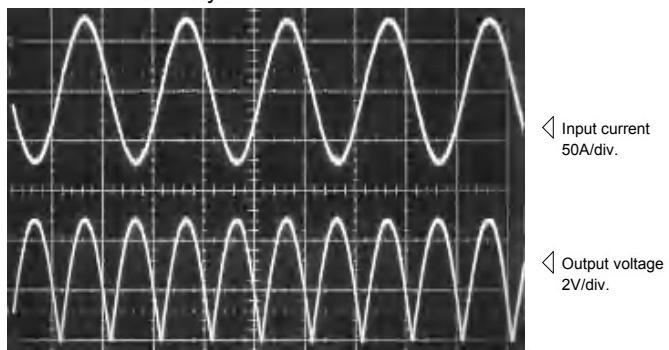
Type	HA-B050-V5	HA-B100-V5	HA-C250-V5
Rated primary current [If]	50Arms	100Arms	250Arms
Measuring bound	10~50Arms	10~100Arms	12.5~250Arms
Frequency	45~65Hz		
Rated output voltage	DC+5V (Peak) DC+3.21V (Average)		
Ratio error	±3%		
Operating Temp.	-10°C~+55°C		
Storage Temp.	-20°C~+60°C		
Dielectric withstand voltage	2500V AC 1minute		
Insulation resistance	Not less than 10MΩ 500V DC		
Insulation distance	Not less than 8mm		
Others	Output cable: VCTF wire 0.3mm ² , L=2000mm Output connector: RISE housing 1-178128-2 (AMP) RISE contact 175195-2		

Characteristics chart

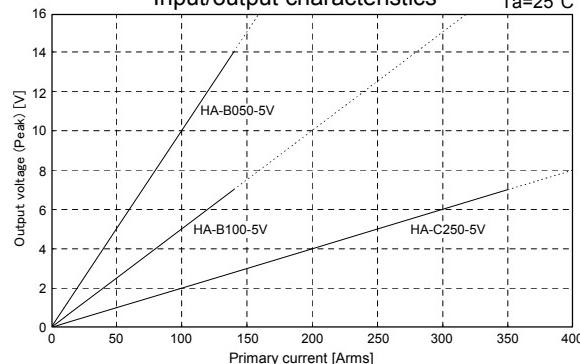
HA-B100-5V

10ms/div. Time base

Secondary current waveform



Input/output characteristics



Note: The solid lines indicate the possible range of a continuous flow of electricity.

Note: The marks "△" means 0V or 0A.

HA-BR



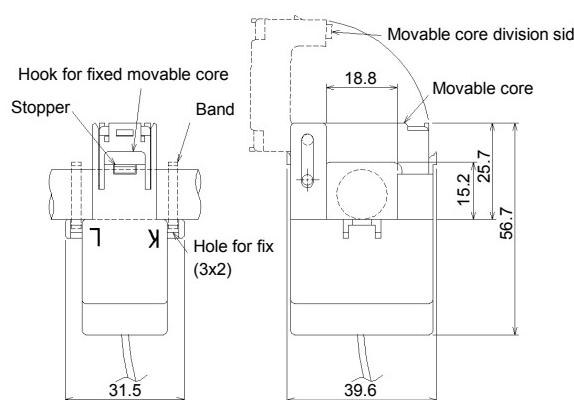
- Rated primary current 50A ~ 100A
- Simple mounting for exiting panel which is clamp type
- Internal output protection circuit
- True actual effective value output circuit built in realizing highly precise measurement with wide input waveform
- Conventional CT + transducer may be replaced by one unit of this product

Applications

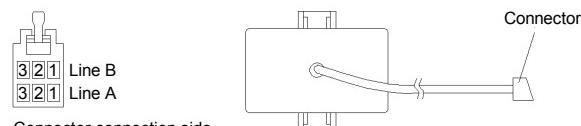
Energy measurement unit, Exchange current measurement system

Dimensions

(mm)



Weight : 90g



A1		
A2	Black	Output (GND)
A3	Green	Output
B1		
B2	White	(-) Terminal
B3	Red	(+) Terminal

General tolerance: ±0.5

Specification

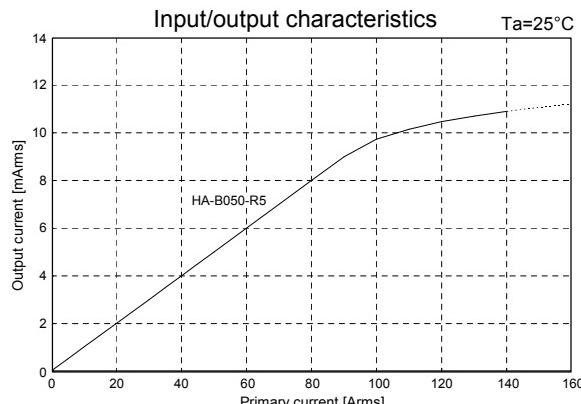
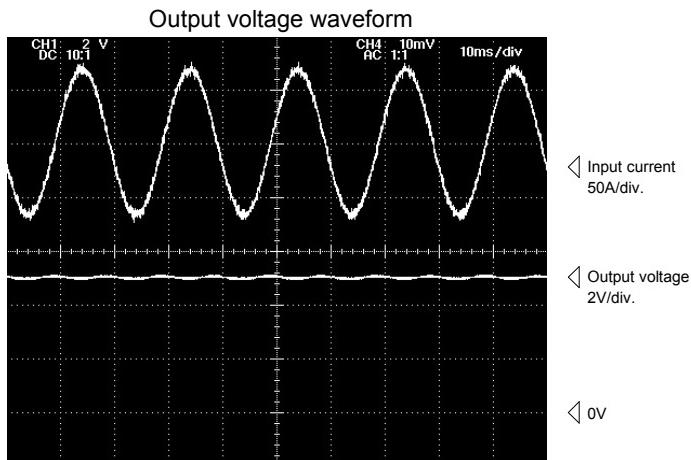
Ta=25°C

Type	HA-B050-R5
Rated current [If]	50Arms
Frequency	45~65Hz
Rated output voltage	DC+5V at 50/60Hz
Output voltage ratio error	Within ±3% (10~50A at input) at 50/60Hz Within -50% (1A at input) at 50/60Hz
Response time	Within 500ms (Input 0~If Sine wave, Output until 90% point)
Load resistance	$RL \leq 5k\Omega$
Control power supply	±15V±5%
Consumption current	Within 5mA
Operating Temp.	-10°C~+55°C
Storage Temp.	-20°C~+60°C
Dielectric withstand voltage	2500V AC 1minute
Insulation resistance	Not less than 10MΩ 500V DC
Insulation distance	Not less than 8mm
Others	Cable: VCTF wire 0.2mm ² , 4-core, L=3000mm Connector: RISE housing 1-13818119-3 (AMP) RISE contact 1318106-1

Characteristics chart

HA-B050-R5

10ms/div. Time base



Note: The solid lines indicate the possible range of a continuous flow of electricity.

Note: The marks " ◁ " means 0V or 0A.